

# Memo

To: Malibu Unites  
From: Kurt Fehling  
Paul Black, Ph.D., Neptune & Company  
CC:  
Date: May 9, 2014  
Re: Comments to Comprehensive PCB-Related Building Materials Inspection,  
Management, and Removal Plan for the Santa Monica-Malibu Unified School District  
April 2014. Prepared by Environ.

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This technical memorandum summarizes a review of, and provides comments regarding, the above-referenced document referred to herein as the “Plan”. Page numbers referenced are for the hard copy version of this document.

## **General Comments**

General Comment #1 The Plan as written is wholly inadequate. It does not adhere to basic environmental investigation principals regulations of the USEPA<sup>1</sup> and CalEPA<sup>2</sup>. Specifically, when investigation of a site commences, it generally starts with a Conceptual Site Model (CSM). A CSM is a fact finding process that examines the historical use of the site, determines what the site was used for such as manufacturing, agricultural, or military uses. This information is then used to determine what if any processes or chemicals were used or stored on site and where. Once this has been determined, then an environmental sampling program is planned. This program should incorporate elements of the CSM to determine what chemicals are analyzed, in what environmental media, and at what locations. This has never been done for at the school. Rather, a more haphazard approach has been employed and the current

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<sup>1</sup> Risk Assessment Guidance for Superfund, Volume A. USEPA, 1989.

<http://www.epa.gov/oswer/riskassessment/ragsa/>

<sup>2</sup> Preliminary Endangerment Assessment Guidance Manual. CalEPA, 2013.

<https://dtsc.ca.gov/SiteCleanup/Brownfields/upload/Preliminary-Endangerment-Assessment-Guidance-Manual.pdf>

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

Plan, if implemented, will add little to the understanding of the chemicals that exist at the school, how students and staff may be exposed and to what levels. The Plan should be revised to incorporate and adhere to the USEPA and CalEPA guidelines for site assessment and human health risk assessment. Only then, will potential risks be elucidated and proper risk management plans implemented.

If the school were an industrial facility regulated by either the USEPA or CalEPA and needed to conduct such an investigation, we would challenge that they (the company) and any resulting sampling plan would be held to a much higher standard than what is being done here. We have collectively worked on hundreds of such sites and in each and in almost every instance, the company (also known as “responsible party” or RP) had to complete a CMS, and had to complete comprehensive sample plans (known in the industry as “Phase I” and Phase II” investigations or Remedial Investigations; RIs). Further, a site such as this would be (and should be) held to residential standards. As such, soil cleanup levels would range from 0.000034 to 3.9 mg/kg (ppm). It is incumbent on both the CalEPA and USEPA to hold the investigations at the Malibu School to the same standards as other similar sites. Anything less would be unresponsive to the students, staff, and community in general. Nothing short of a full investigation is warranted to determine the full nature and extent of chemical contamination at this school property and buildings. We understand that CalEPA may be conducting a more thorough investigation of soils (presentation by T. Cota, May 7, 2014) and other environmental media. If this is truly the case, then the Plan should at least be clearer that it will be part of a larger investigation and how it will be used in a comprehensive evaluation of potential exposures at the school.

General Comment #2 The Plan only addresses PCBs in caulk, glazing and other sealants. This does not address potential cumulative exposures to other toxicants which previous investigations indicate that arsenic, various pesticides such as DDT, and asbestos. A comprehensive investigation needs to be conducted that adheres to USEPA and CalEPA guidelines and regulations so that a thorough human health risk assessment may be conducted. Alternatively, the Plan should specifically state that it is a part of a much larger investigation program and clearly define the reasons for its limited scope.

General Comment #3 The health of students and staff members appears to not be of concern according to the Plan given that “visual inspections” for PCBs will be conducted and “best management practices” (BMPs) employed for

mitigation. We know of no scientific basis for visual inspection nor of any single person who is able to visually determine the presence or absence of PCBs in any matrix. Contrary to these Plan statements, in Section 2.5.2.3, the Plan states that “The presence or absence of PCBs in caulk and glazing cannot be ascertained through visual inspection.” Yet that is exactly what is proposed in other sections. It appears that the authors have used a boiler plate asbestos investigation program which is not appropriate for PCB investigations.

The Plan infers that the BMP methods are essentially consistent with the program used to address a similar issue in the New York (NY) City school system pilot study. However, the specifics of the BMP programs are quite disparate. Specifically, the BMP plan used for the NY pilot program relied heavily on HVAC systems; specifically, increased ventilation.<sup>3</sup> Further, the NY schools issues were exacerbated by PCBs from fluorescent light fixture ballast and it should be noted that the NY BMP program is still in the “pilot” phase and has not been implemented as the remedy of choice for the district as a whole. We also note that in an email from Steven Armann of USEPA Region 9 to Superintendent Sandra Lyon, that BMPs are “interim actions to reduce risk and are not a final cleanup plan”.<sup>4</sup> The BMP proposed for Malibu is essentially janitorial control of dusts. The BMP program for NY showed some positive results but they may not be appropriate here given the limited use of forced air HVAC systems at the school. In fact, there is little control over the air exchange rate at the Malibu school due to limited HVAC and windows in many buildings. Simple dust control may have an immediate effect but it is not known how quickly dust re-deposition occurs rendering the proposed BMP incomplete at best.

The BMP program is of little merit as no scientific support is provided as to its effectiveness. One could argue that BMP is currently in use at the District through standard housekeeping procedures which would then beg the question “If current housekeeping methods are not enough, why would anyone believe that they would be effective in the future”. In addition and with all due respect to the custodial staff at the school, how can one reasonably expect to place this staff in charge of the

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<sup>3</sup> Final Remedial Investigation Report for the New York City School Construction Authority, Pilot Study to Address PCB Caulk in New York City School Buildings. TRC Engineers, Inc. and New York City School Construction Authority. 2012. <http://www.nycsca.org/Community/Programs/EPA-NYC-PCB/PCBDocs/FinalRIReport.pdf>

<sup>4</sup> Electronic mail from S. Armann, USEPA Region 9 RCRA Corrective Action Office to S. Lyon, Superintendent of Schools, November 21, 2013.

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

program when they have never been trained on PCB remediation? Finally, the Plan routinely mentions that personal protective equipment (PPE) will be used for all inspectors and workers who most likely will only be present for a few days or weeks. Yet children and teachers are present during the entire school year with some District staff present all year long.

Logic and the precaution would dictate that the health of students and staff members should be the primary concern and goal of any investigation at the school. As it now stands, the Plan does little to address this.

General Comment #4 The Plan explicitly states that there is no planned removal of PCB containing materials except for that which will coincide with building demolition or remodeling. Yet there is no timetable presented for any demolition or remodeling of the buildings. Will every building be remodeled? Will every building be demolished? The Plan as written is not acceptable. The remainder of the Plan discusses “best management practices”, which amounts to little more than cleaning protocols. The Plan discusses how the BMP effectiveness will be evaluated but provides little in the way of what to do if BMPs result in limited effect. Further, the specific standards to be met by BMPs are not specified. Essentially, BMPs seem to be a palliative response rather than a cure. The real cure is to provide a plan, with a timeline for removal of all PCB containing materials. Anything short of this is unresponsive to the community concerns and the health and well-being of the students and staff of the school district.

General Comment #5 Based upon previous soil sampling and remediation completed at the school, it appears that caulk and window glazing are not the only source of PCBs; especially with respect to soil. As of yet, it does not appear that a CSM has been developed nor has a comprehensive soil sampling plan been implemented (as discussed previously). It also appears that Data Quality Objectives (DQO) have ever been considered. The DQO process<sup>5</sup> was created to assist with impacted sites just like the school when the extent and source of contamination is unknown. It seems imperative that the DQO process be strictly followed to ensure that proper assessment of chemical impacts is determined. In general there is no basis for the briefly described sampling plan. Sampling plans for both investigation and waste disposal should be based on USEPA’s

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<sup>5</sup> Guidance on Systematic Planning Using the Data Quality Objectives Process. USEPA, 2006.  
<http://www.epa.gov/QUALITY/qs-docs/g4-final.pdf>

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

DQO process. There is no indication that the DQO process has been followed, and hence no justification for the amount of sampling proposed.

General Comment #6 All caulk should be analyzed if there is any concern that it could be from before 1981. It should not be limited to “deteriorating” or other “visible” signs. Rather, age alone should dictate whether or not it is sampled and analyzed for PCBs. Further, caulking from each and every room of each building constructed before 1982 should be analyzed for PCBs.

### **Technical Comments**

Comment #1 The Plan as written is very generic and needs to be more narrowed on the issues being investigated at the school.

Comment #2 The Plan was written in response to an USEPA letter of January 27<sup>th</sup>, 2014. However, this letter is remiss on several points that once clarified and the Plan revised accordingly, would add clarity to the overall approach and better support the Plan objectives. Specifically:

- A. USEPA states in item #1 of their letter that “Removal of caulk with known concentrations above 50 ppm PCBs...” USEPA needs to defend the use of 50 ppm as a remediation level. While we understand that this is a requirement under the TSCA regulations, USEPA has not stated if this is a health protective level, and if so, for what pathways and land use scenarios is it appropriate. To wit, the EPA Regional Screening Level for various Aroclors and PCB congeners in soil range from 0.000034 to 3.9 mg/kg (ppm). Therefore, it is not clear why the Agency believes 50 ppm in caulk is health protective.
- B. The USEPA needs to demonstrate how the 50 ppm threshold relates to their air threshold of 0.2  $\mu\text{g}/\text{m}^3$  and 10  $\mu\text{g}/100 \text{ cm}^2$  and how the 50 ppm is protective of each of these other two thresholds.
- C. The USEPA letter stipulates removal of all caulk greater than 50 ppm but provides no deadline for this removal. USEPA needs to set a deadline with a hasty emphasis. Further, the ENVIRON Plan is unresponsive to this directive from USEPA to remove all caulk and other materials above 50 ppm. USEPA has directed the District numerous times to remove these materials (see also, email cited in footnote #4).
- D. USEPA does not define what “deteriorating caulk” is nor does the ENVIRON Plan for that matter. This needs to be defined.
- E. It is not clear why the caulk needs to be classified as “deteriorating” in order to be mitigated. We would posit that all caulk containing PCBs at 50 ppm

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

or more should be removed. Further, USEPA needs to demonstrate that 50 ppm is health protective as stated previously.

- F. With respect to Item #3 of this letter, USEPA fails to specifically state when air samples should be collected. USEPA should specifically state that all school district rooms with PCB containing materials should be slated for air samples prior to and following any remediation activities.

Comment #3 In the cover letter for the Plan and in response to Item #3 of the USEPA letter, ENVIRON fails to comply with USEPA's directive to collect air samples from all rooms of pre-1979 structures. Rather, Environ states that air samples will only be collected from "representative" rooms that are routinely occupied and only after BMP cleaning or repair. This is inadequate and does not properly respond to USEPA's directive. Room activities may change over time so only sampling rooms "routinely occupied" under current use conditions is inadequate. Rather, air samples should be collected from all rooms with PCB containing materials prior to and following remedial activities.

Comment #4 Section 1, page 1. The Plan states that there will be a "learning curve" for implementing this Plan. There should be no such learning curve. Learning should be reserved for the students at the school and only qualified professionals should be conducting the investigation.

Comment #5 Section 2.2.1. With all due respect to the superintendent and their staff, it seems that placing district personnel in charge of the PCB management plan is irresponsible. District personnel have been trained in school administration not environmental management and it is doubtful they possess the knowledge and required skill sets to oversee such a plan. Only trained and qualified personnel should be charged with such duties.

Comment #6 Section 2.2.3, page 4. It should be noted that any deviations or variances to the final approved plan require regulatory approval.

Comment #7 Section 2.4.1, page 5. The Plan sounds like it was written for a professional services building and not a school. It is doubtful that the school facilities manager would have or maintain such records. Rather than try to guess or theorize which buildings may or may not have been remodeled, the only sure way to determine the presence or absence of PCBs is through sampling and laboratory testing. Each and every known or suspected room should be tested.

Comment #8 Section 2.5.1, page 7. The Opening Conference should be more open as it needs to address the needs and concerns of the stakeholders; including parents, children and district staff. As currently stated, the goals are insufficient.

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

Further and with respect to the second bullet, it is doubtful that anyone at the school would know where PCB materials were stored or used. While this may provide some information, the only certain manner to determine PCB containing materials is through laboratory testing.

Comment #9 Section 2.5.1, page 7. If protective clothing is needed during an inspection for a single visit by an adult, then this implies that the current risks to school children are too great and that they warrant protection as well. This goes to the lack of clarity and thoroughness of the Plan in general.

Comment #10 Section 2.5.2, page 8 (and in general). The final Plan should address possible PCBs in sealants as well.

Comment #11 Section 2.5.2, page 8 (and in general). The underlying issue is that the CSM is not developed, and sampling plans are not useful without a CSM, or without subsequent DQOs. The Plan as currently written, is little more than guesswork, which is exactly the reason why the DQO process was developed (to avoid guesswork, and hence to provide some defensibility for sampling plans).

Comment #12 Section 2.5.2, page 8 (and in general). Room usage patterns may change over time. HVAC systems may change over time. Therefore, we find the approach to determine which rooms to sample to be based upon current use to be of little merit. Each and every room in each and every school building needs to be sampled.

Comment #13 Section 2.5.2, page 8 (and in general). There is no discussion of the release mechanisms of PCBs in caulk. Again, this requires development of a CSM to understand how and why PCBs might be a problem and to ensure that the sampling plan accurately quantifies potential sources such that subsequent exposures may be quantified.

Comment #14 Section 2.5.2.1, page 9. Visual inspection is inadequate for PCB leaks from ballasts. The only certain method to ascertain if residual PCBs are present on light fixtures is to collect samples (most likely wipe samples). We note that most if not all "PCB ballasts" were removed from the school in 2000.

Comment #15 Section 2.5.3, page 14. The Closing Conference is inadequate. After the inspections and sampling, it seems that the Closing Conference could be used to complete the CSM and develop exposure scenarios. This should include release mechanisms, transport mechanisms, and DQOs. Further, ALL stakeholders should be informed of the results. This includes teachers and other staff members and parents of the school children.

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

Comment #16 Section 2.6.2, page 16, last bullet. The Plan states “If characterization of PCB-containing material is warranted...” One of the overarching goals of this investigation is to characterize PCBs . How can this Plan possibly wonder if it “is warranted”?

Comment #17 Last paragraph before Section 2.6.3, page 16. PCBs should be sampled both before and after any BMP findings as a measure of the effectiveness of the BMP.

Comment #18 Section 3.4.2, first bullet. page 20. It is unclear why all HVAC items are designated to be cleaned with the exception of ceiling supplies and return plenums. All HVAC items should be included.

Comment #19 Section 3.4.1, page 20. There is no basis for this amount of cleaning suggested. Reference to regulatory guidelines or methods, or scientific literature should be cited as to the effectiveness of the BMP described in the Plan. Further, who will be responsible to ensure this level of cleaning is performed? What are the ramifications if it is not performed? What additional impacts to human health will occur if it is not performed?

Comment #20 Section 3.7.2.1, page 22. This section does not provide any description of what “patch and repair” includes or details. A detailed description and protocol for this should be provided.

Comment #21 Section 3.7.2.2, page 23. This section discusses encapsulation methods and cites a USEPA study from 2012. However, in reviewing this USEPA study, it appears that it was conducted on non-deteriorated materials containing PCBs. Therefore, it is unclear whether this method presents a viable method suitable for conditions at the school district.

Comment #22 Section 3.7.2.3, page 23. We completely disagree with the Plan’s assertion that the deteriorated PCB materials should be “repaired.” There has been no substantiation that this method effectively precludes exposure. Only proven mitigation or removal techniques should be employed.

Comment #23 Section 3.8, page 23. If dust keeps accumulating, as suggested, then how is post-cleaning validation helpful? This again, dictates that source removal may well be the only viable option for the school. Repeated “cleaning” rather than source control seems illogical and of little merit. Further, where are the scientific studies to demonstrate that cleaning is an effective remediation tool for this issue? Without clear demonstration that the proposed cleaning and BMP techniques are effective, the staff and children of the school are continually

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

exposed. Quite simply, the Plan provides no path forward that demonstrates that human health will be protected and that exposures will be reduced.

Comment #24 Section 3.8, page 23. It is inconceivable that the Plan is to use BMPs to address PCB exposure at the school. We find the BMP plan to be of little merit as it has a fatal flaw: It does not prevent exposure to the PCB materials from the school. This section discusses that “validation” will be conducted on the effectiveness of the BMPs. This suggests that the BMP techniques may prove to be inadequate as this section implies; which then begs the question: “Why is it even being considered?” In the meantime, PCB exposure would continue to occur. It would appear that the only logical and completely permanent solution is the removal of PCB materials such that no long term BMP program would need to be implemented. Further, given the uncertainty with the BMP program and the indefinite nature of it, this approach has little merit. Until then, exposures will continue in an unmitigated fashion.

Comment #25 Section 3.8, page 23. A “white glove” test is not scientifically proven to remove PCBs. The goal is not to remove dust, the goal is to remove PCBs. Proper wipe sampling that will be submitted for appropriate laboratory analysis is the only measure of merit to determine if PCBs have been removed from a surface. Anything less is nonresponsive to the issues at the school—and exposure to PCBs continues unabated.

Comment #26 Section 3.9, page 24. Details of the composite sampling need to be provided. This should depend on the nature of the waste, the different types of items, and should require sub-sampling of each type of matrix in the waste. The composite sampling plan design should be described in more detail, and should follow the basic tenets of the DQO process.

Comment #27 Section 3.10, page 24. An education program that requires children to wash their hands regularly seems untenable. This goes back to the issue of source removal such that recurring management should not be required.

Comment #28 Section 4, page 26. This section starts by indicating compliance with USEPA requirements for a risk-based cleanup. However, there is no risk assessment developed, so it is not clear how this Plan can be compliant with a risk-based requirement.

Comment #29 Section 4.1.2.1, page 27. As stated previously and with all due respect to the superintendent and their staff, it seems that placing district personnel in charge of the PCB management plan is irresponsible. Only trained and qualified personnel should be charged with such duties.

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

Comment #30 Section 4.2, page 28. Characterization apparently will not happen until renovation or demolition. How can one know if the children are at risk if there is no prior characterization? This is completely illogical and reckless with respect to human health. This suggests that it is acceptable to expose children until renovation or demolition without knowing in the meantime what the risks might be. Especially considering that the Plan calls for PPE for adults who may only be present for a few days or weeks during the proposed investigation. How can this be reconciled or justified? An approach needs to be set up that involves development of a CSM, exposure model and DQOs.

Comment #31 Section 4.2.1, page 28. It is stated that PPE might be needed for worker safety. Again, this implies that is acceptable to expose children and staff members on a daily basis. This seems careless and irresponsible. The Plan should also be updated to state that no children or staff members should be present at the school during any testing.

Comment #32 Section 4.2.1, page 29, first bullet. Wouldn't the ones most in need of medical monitoring be the students and staff members of the school?

Comment #33 Section 4.2.2; page 29. There needs to be justification on why three samples are considered appropriate. The only real means to do so is through DQOs which have not been developed. Further, clarification is needed as will there be three samples be collected from one room, one window? Clarity is required here.

Comment #34 Section 4.2.3, page 30. Why does ENVIRON not know if any soil sampling has been performed? There are several documents listed on the District's website that detail past sampling operations. This goes back to previous comments that detail the necessity for a CSM. It also speaks to the lack of forethought that went into the development of this Plan. ENVIRON should have reviewed previous sampling reports for the school so that the Plan could have been more focused and thoughtful.

Comment #35 Section 4.2.4, page 30. Very little detail is provided on what the Summary Report might contain. In particular, it is not clear how the data will be used to support some kind of risk evaluation. More detail is required so that it can be determined if the Summary Report, as planned, is sufficient.

Comment #36 Section 4.3, page 31. It is not clear how remediation decisions will be made, considering the lack of clarity in this Plan. The Plan needs to be revised in its entirety to provide more detail and support for planned activities.

Comment #37 Section 4.3.3.4 Air sampling is expensive and measures transient conditions. Given that the Plan does not provide for any appreciable PCB removal (as

Ms. Jennifer deNicola  
Ms Cami Winikoff  
May 9, 2014

currently written), frequent air sampling must occur. These samples need to characterize the change in ambient temperature, humidity, prevailing wind, and room use among other considerations. Given all the potential permeations of these conditions, it would be prudent to consider removal the source rather than try to characterize all the potential conditions in the numerous rooms throughout all the school buildings simply based on the costs of a comprehensive air sampling program. Air monitoring should be used to determine the effectiveness of source removal. Following source removal, air monitoring should only be conducted without any children present, and following all windows and HVAC system being close for at least 24 to 48 hours.

Comment #38 Section 4.3.7. There is no citation or support for using 1 ppm for porous building materials and soil. As stated previously, health based standards for all media need to be developed and supported via a risk assessment. Use of generic standards (especially those that are not health based) is not acceptable.

Comment #39 Section 4.3.4, page 34. There is no discussion or reference to the effectiveness of the removal and cleaning techniques proposed in this section. Some discussion and citations to past studies demonstrating the effectiveness of the proposed techniques should be provided.