



**UNITED STATES ENVIRONMENTAL PROTECTION  
AGENCY  
REGION 9**

**75 Hawthorne Street  
San Francisco, CA 94105-3901**

**MEMORANDUM**

**SUBJECT: Technical review: "Draft Dioxin-Like Polychlorinated Biphenyl (PCB) Congener Study Work Plan, Revision 1", Revised March 2009 - Chemical Waste Management**

**FROM: Chemical Waste Management – Kettleman Hills Hazardous Waste Landfill Facility Technical Support Team**  
U.S. Environmental Protection Agency – Pacific Southwest Region IX

**TO: Kevin Wong, Senior RCRA Policy Advisor**  
Project Manager, CWM-KHF PCB Permit

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Thank you for the opportunity to review and develop comments regarding the Chemical Waste Management, Inc. Kettleman Hills Facility (KHF) Hazardous Waste Landfill "draft Dioxin-like Polychlorinated Biphenyl (PCB) Congener Study Workplan" Revision #1. The March 2009 submittal was prepared by *Wenck Associates, Inc.*, and is designed to provide the overarching strategy and general protocols for sampling and analysis of the co-planar or dioxin-like PCB congeners. This version of the workplan was developed to remain responsive to a set of comprehensive review comments developed (12 Feb 2009) by EPA staff from review of an initial Jan. 2009 sampling and analysis workplan. The current submittal also includes a detailed response to comments summary addendum, and EPA is also anticipating additional site-specific air dispersion and transport modeling information which will also be incorporated into the planned multi-media sampling activities.

Please note that the comments herein are not considerate of any review nor input from community or environmental stakeholders. EPA has shared CWM's initial sampling and analysis submittal with various stakeholders and requested their comments and insight. To date, EPA has not received comments from these external stakeholder groups or communities.

We detail below a number of overarching and general comments. We believe that the gravity of these comments should not impact the currently scheduled sampling activities. That is, this version of the workplan documents a strategy and approach that is substantially complete and adequate to support its intended purpose. The comments detailed below should not be construed to delay the anticipated sampling activities; rather the resolution of many of the comments may appropriately be made in the data analysis and formal risk assessment processes. Should you have additional questions or concerns, please do not hesitate to contact any member of the technical support staff directly.

**General Comments:**

1. The overall approach – media to be sampled, number of samples collected, sampling methods, general location of samples and chemical analyses to be performed is generally and conceptually sound. The current revision reflects substantive incorporation of the vast majority of EPA's previous recommendations, including providing much of the detail we observed to be lacking in the initial draft. In addition, the revised document has been updated

to address the vast majority of the quality assurance concerns provided to CWM. Details of the monitoring program are not presented in a manner that is entirely consistent with EPA guidance; however the document describes adequate details of most aspects of the sampling and analysis strategy. The level of systematic planning (i.e., data quality objectives process) has improved and, with the addition of the proposed air transport and deposition modeling, there should be sufficient technical justification to objectively support the sampling design proposed.

2. [Work Plan: Figure 3, Air Sampling and Met Station Locations; Figure 4, Proposed Soils and Vegetation Sampling Locations] These figures need to be updated to indicate the location of the new meteorological monitoring station discussed in this plan.
3. [QAPP; Section 7.0, Analytical Procedures, QAPP Worksheet #23, Analytical SOP Reference Table] The response to comments states that standard operating procedures (SOPs) for “laboratory sample handling, preparation, and analysis have been submitted as Confidential Business Information.” However, only the analytical SOP was received. According to Worksheet #23, there is a separate SOP for sample preparation which should also be submitted. Additionally, EPA requested a SOP for sample handling which should include information on the manner in which the laboratory will perform homogenization of these composite soil samples.
4. [Field Sampling for Vegetation and Soil SOP, Vegetation Sample Collection, Number 5] The sampling procedure for vegetation indicates that “green, or actively growing, portion of each plant type within the sample site will be selected.” This is consistent with the first sampling event. However, following this protocol during the second sampling event would exclude the “brown,” seasonal vegetation present which they also stated they intend to collect. This SOP needs to be expanded to include a procedure for sampling of appropriate vegetation during the dry season.
5. [Data acquisition; Section 3.0] The table on page 3-2 provides the World Health Organization (WHO) designated dioxin-like or co-planar PCB congeners and their associated toxicity equivalence factors (TEFs). EPA provided CWM with a current listing of the dioxin-like PCB congeners and the EPA-approved TEF values. Please modify and update the table to reflect the TEF values provided to CWM in the Nov. 2008 National Center for Environmental Assessment (NCEA) document: “Recommended Toxicity Equivalency Factors (TEFs) for Human Health Risk Assessments of Dioxin and Dioxin-like Compounds”.
6. The work plan presents an approach to the post-sampling tasks that is generally sound in the context of our current knowledge of site conditions. However, a plan is only a plan and that knowledge will change with the receipt of the sampling results which may elicit changes to the approach appropriate or necessary. EPA strongly encourages CWM and their contractors to engage EPA personnel in an ongoing dialog to facilitate interpretation of the sampling results and performing the risk assessments. Such a dialog can markedly decrease the amount of time needed for the contractors to perform, and EPA to review and concur with the resultant sampling reports and risk estimates.
7. The work plan discusses a number of determinations and decisions that represent risk management decisions that will be made by EPA, not Wenke Associates, Inc. or Chemical Waste Management. The work plan need not be revised to clarify this.

#### Specific Comments:

1. Section 3.0, page 3-2 – As noted in EPA’s 2008 “Framework for Application of the Toxicity Equivalence Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessments” (EPA 100R-08/004), the WHO TEFs published in 2006 for mammals may be used in the ecological risk assessment.

2. Section 3.2.1, paragraph 1 – The second and third sentences contains numerous statements that do not appear to be technical correct and are not supported. EPA recommends replacing those sentences with a more precise statement: “Seven samples intended to characterize surface soil concentrations will be collected from the perimeter of the site from locations that are generally downwind (potentially affected) and upwind (unaffected) from B-18, the currently active PCB landfill; an eighth sample will be collected from a location immediately downwind from B-18”.
3. Section 3.2.1 and Figure 4 – EPA’s request for the sample immediately adjacent to the B-18 landfill was misinterpreted. That sample is intended to address the potential for elevated concentration of PCBs in sediment in the runoff swale running in a northwest to southeast direction in that area, as depicted in the image below. That image was copied from Figure 4 of the work plan and the blue stars convey the approximate location of the swale as recalled from our site visit. Please collect material for that sample from the low-lying areas in that swale between the road south of B-18 and the southern property boundary (as suggested by the blue stars). To the extent feasible, the sampled material should comprise sediment that appears to have been deposited during storm water runoff events. Please collect from that swale at least half of the material to comprise the resultant composite. If a portion of the material to be composited is collected from the locations identified in the picture below by the red dots labeled 1 through 10, those materials should also be sediment from runoff pathways. The red dots labeled 8, 9, and 10 are of much less interest relative to the other sample locations. EPA desires that the sediment sample represent material from the runoff swale. If CWM wishes to collect an additional separate sample or samples in the area and include them in the ecological risk assessment, EPA has no objection.
4. Section 4.2 – The database of analytical results should include data qualifiers (“flags”) and detection limits for analytes not detected, on a sample-by-sample basis.
5. Section 5.2.1, paragraph 2 – The CARB 2007 ambient air monitoring data should be obtained and evaluated for its utility in the risk assessment but ultimately may or may not be useful as “background” data.
6. Section 5.4.5, paragraphs 3 through 6 – PCBs occur and are released to the environment as a mixture and the components of that mixture (the congeners) enjoy a similar mode of action (MOA), therefore EPA considers their impacts to remain additive. Accordingly, the evaluation of possible COPECs should consider the hazard index (HI) for the mixture as a whole; addressing individual congeners is not necessary but may be useful.
7. Section 5.4.5, paragraphs 4 and 5 – The COPEC evaluation should consider cumulative exposure to all media in an exposure area and should not consider exposure to soil and vegetation separately.
8. Section 6.0 - The reference for “Hathaway 2008” should be deleted.
9. Figure 5 – The figure should reflect the use of several hypothetical ecological receptors in the risk assessment. EPA also recommends increasing the level of detail so that each exposure pathway to be quantified for each receptor is identified with an “X” in a box in the “Receptor” columns.
10. Appendix G (SOP), Vegetation Sample Collection Section, #5 – The quantity of plant material to be collected should be specified, e.g., “a 4-oz jar will be filled with plant material manually compacted using the sample clipping tool”.
11. Appendix G (SOP), Vegetation Sample Collection, #4 and Soil Sample Collection, #12 – It is acceptable and may be ergonomically necessary to

approach the sample location from a cross-wind as well as downwind direction.

12. Appendix G (SOP), Plant Tissue Sampling Data Sheet – The data collected should include a description of the relative quantities of each combination of tissue type and species or plant type. These data may be approximate and generalizations made by the sampling crew, but should be described for each sample jar collected.

