

Comment Response Document
Regarding the Draft Final Total Maximum Daily Loads of Polychlorinated Biphenyls in the Sassafras River, Oligohaline Segment, Cecil and Kent Counties, Maryland

The Maryland Department of the Environment (MDE) has conducted a public review of the proposed TMDL of PCBs for Sassafras River Embayment. The public comment period was open from August 6, 2009 through September 4, 2009. MDE received one set of comments. This document summarizes all of the comments and provides MDE's responses.

List of Commentors

Author	Affiliation	Date	Comment Number
Ms. Kascie Herron	Sassafras RIVERKEEPER	Sept. 4, 2009	1-7

COMMENTS AND RESPONSES

Comment 1:

The Commentor references page 1 of the public comment version of the Total Maximum Daily Load (TMDL) report. While the Commentor is aware that this TMDL was written to address the Polychlorinated Biphenyl (PCB) and not total suspended solids (TSS) impairment in the Sassafras River embayment, the Commentor notes that the TSS listing was moved from Category 5 of the Integrated Report (*waterbody is impaired, does not attain the water quality standard, and a TMDL is required*) to Category 2 (*waterbodies meeting some water quality standards [in this case TSS], but with insufficient data to assess all impairments*). The Commentor would like to know the details surrounding this and whether this issue is discussed in the 2008 Integrated Report.

Response 1:

The delisting of the TSS impairment in the Sassafras River Oligohaline segment is unrelated to the PCB TMDL. The reason for the delisting was the fact that this segment was found to meet the State's submerged aquatic vegetation (SAV) restoration goal (see Table 1 below). Additional information relating to the Sassafras River Oligohaline TSS delisting can be found on page 100 of the 2008 Integrated Report (MDE 2008).

Table 1. Delistings for 2008 (Excerpt from the Maryland 2008 Integrated Report)

Assessment Unit	Basin Name	Listing Scale	Parameter	Reason for Delisting 1. Based on new data, State determines water quality standard is being met. 2. EPA concurrence of WQA . 3. Error in original listing. 4. Further monitoring is needed.	Notes
MD-SASOH	SASOH - Sassafras River Oligohaline	Chesapeake Bay Segment	Total Suspended Solids (TSS)	1	SAV meets restoration goal. This listing supersedes the previous Sediment/TSS listing for watershed 02130610.

Comment 2:

The Commentor references page 5 of the public comment version of the TMDL report. Given that resuspension of sediments is one of the largest sources of PCBs to the Sassafras River embayment, the Commentor wonders how safe loadings can be estimated if a PCB sediment criterion has not been established. The Commentor further states that it is not clear whether a relationship has been made between the PCBs found in sediments and those found in the water column.

Response 2:

Although Maryland currently does not have a tPCB criterion for sediments, MDE has defined a site specific tPCB sediment TMDL endpoint (2.34 ng/g) for the Sassafras River embayment – this endpoint is based on the tPCB fish tissue listing threshold and the Sassafras River tPCB sediment concentration data. Furthermore, the tidally averaged multi-segment one-dimensional transport model, used to define the Sassafras River embayment tPCB TMDL, incorporates the long term influences of fresh water discharge, dispersion, and exchanges between the water column and bottom sediments, thereby representing the dynamic transport within the Sassafras River embayment. As stated on p.16 of the TMDL report, assuming that the average tPCB concentrations at the Sassafras River open boundary are decreasing at a rate of 6.5% per year, the model was run for 40,000 days to predict the time needed for the water column tPCB concentration to meet the site specific TMDL endpoint. The results indicate that when the tPCB water column TMDL endpoint (0.11 ng/L) was met, the site specific tPCB sediment TMDL endpoint (2.34 ng/g) was met as well. After 13,996 days (about 38 years) the tPCB water column concentration reached 0.11 ng/L, at which time the sediment tPCB concentration was equal to 2.29 ng/g.

Comment 3:

The Commentor is concerned that the total watershed baseline load in the Sassafras watershed is estimated to be only 28.1 g/year and states that it is unclear which National Pollutant Discharge

Elimination System (NPDES) regulated stormwater sources were accounted for. The Commentor would like to be sure the following facilities were included:

Table 2. Surface Water Discharge Permit

Facility Name	Permit Nr.	Description
Kent Sand and Gravel – Alexander Pit	00MM9896/ MDG499896	Jacobs Creek/Alexander Rd. and Massey Rd./general permit for a borrow pit

Table 3. Industrial Stormwater Permit

Facility Name	Permit Nr.	Description
David A. Bramble, INC.	02SW1670	Bramble Way/For Asphalt Plant

Response 3:

It should be pointed out that tPCB loadings from the Sassafras River watershed (including the NPDES regulated stormwater loads) were considered to be insignificant relative to the dominant sources that result in tPCB impairment: (i) Chesapeake Bay tidal influence and (ii) bottom sediments. Therefore, at this point, no reductions were applied to these stormwater entities.

In accordance with the U.S. Environmental Protection Agency guidance (US EPA 2002), NPDES regulated stormwater tPCB loads to the Sassafras River embayment are presented as a single NPDES Regulated Stormwater Waste Load Allocation (WLA). The NPDES Regulated Stormwater WLA constitutes a proportional allocation of the Maryland Watershed Baseline Load to the regulated portion of the Chesapeake Bay Program Phase 5 (CBP P5) urban land use within Cecil County. However, a WLA for NPDES regulated stormwater sources within the Kent County portion of the watershed has not been characterized since only a very small portion of the Kent County CBP P5 urban land use area is considered regulated (0.08%) – mostly because Kent County is not managed under Phase I or II jurisdictional MS4 permit. For this reason, characterization of the Kent County NPDES regulated stormwater load (including loads generated by the facilities mentioned by the Commentor) was impractical. Instead, these loads are implicitly included in the analysis as part of the Watershed Nonpoint Source Load Allocation.

Comment 4:

The Commentor finds it alarming that samples were not collected downstream of the two facilities mentioned in Comment 3 and that only two locations in the non-tidal portions of the watershed were sampled.

Response 4:

Three stations were sampled within the non-tidal portion of the Sassafras River watershed. Two stations are representative of the non-tidal watershed tPCB loads to the Sassafras River embayment, while the thirds station was used to characterize tPCB loads from the Delaware portion of the watershed. Station SA50148 is representative of the tPCB conditions in the largest fresh water stream network delivering tPCB loads to the tidal waterbody and Station SWO0015

is representative of the conditions at the numerous smaller tributaries that feed into the tidal waterbody. The land use conditions of the smaller tributaries are very similar to those upstream from station SW00015, consisting primarily of forest and agricultural land. The Sassafras River watershed is long and narrow with a significant area of the watershed draining directly to the tidal waterbody. As many of the smaller tributaries are tidally influenced they could not be sampled for fresh water flow. Although, as pointed out by the Commentor, only three stations have been sampled, these stations are representative of the water quality conditions in the entire non-tidal portion of the watershed. Samples were not collected downstream of the two facilities previously mentioned in Comment 3 because MDE had no reason to suspect that significant sources of PCB contamination would be associated with these specific sources. Historically, facilities of these types have not been known to apply PCB containing materials in their industrial processes. However, due to the ubiquitous nature of PCBs from sources such as atmospheric deposition, the industrial stormwater managed by these permit holders may contain PCBs but not at levels significantly higher than surface runoff concentrations generally found throughout the watershed.

Based on the relatively low concentrations measured during the non-tidal water quality survey, MDE concluded that the Sassafras River watershed is not considered to be a significant source of PCBs to the Sassafras River embayment. This conclusion is in agreement with the results of the MDE’s 2005 caged clam study (MDE 2009). Additionally, it has been determined that attainment of the tPCB water quality TMDL endpoint will only be possible with significant reduction in the primary sources (i.e., Chesapeake Bay tidal influence and bottom sediments), which is expected to take place over time as the Upper Chesapeake Bay concentrations continue to decline resulting also in natural attenuation of tPCB levels in the legacy sediments. Assuming that the tPCB concentrations in the Upper Chesapeake Bay will continue to decline, at or above the current rate, no additional tPCB reductions will be necessary to meet the “fishing” designated use in the Sassafras River embayment.

Comment 5:

The Commentor also points out that there is no mention of marinas as a source of PCBs. There are seven permitted marinas in the Sassafras River watershed, most with NPDES surface water discharge permits for discharging pool water. However, one marina has an industrial stormwater permit in addition to the general permit and a permit to discharge pool water:

Table 3. Industrial Stormwater Permit - Marina

Facility Name	Permit Nr.	Description
Georgetown Yacht Basin, Inc.	08DP3610/ MD0070033	Sassafras River/Augustine Herman Highway/surface industrial discharge for painting, maintenance and ice machines

Response 5:

MDE is not aware of any information that identifies the marinas in the Sassafras embayment as potential PCB sources.

Comment 6:

The Commentor references page 10 of the public comment version of the TMDL report: “Based on the information gathered from the US EPA’s Superfund Database and MDE’s Environmental Restoration and Redevelopment Program, no known contaminated sites have been identified throughout the watershed.” The Commentor asks whether this considered investigation of historic sources or legacy sources of PCBs. The Commentor states that it seems that a more thorough investigation of sources in the watershed might need to be done, considering that historically, records of transformers were not usually kept.

Response 6:

Both databases provide information about all known or previously identified historic/legacy contaminated sites. The Superfund Database is maintained by US EPA headquarters and contains information on site location, detected contaminants, and other site information relating to the identified contaminated sites. MDE's Environmental Restoration and Redevelopment Program Comprehensive Database is maintained by MDE and provides a more comprehensive listing of all contaminated sites throughout Maryland. For any sites where PCB levels have been detected, MDE quantifies the tPCB loading to the waterbody of concern with the use of the Revised Universal Soil Loss Equation Version II in conjunction with soil contamination data and site specific information (i.e., soil type, land cover, slope, etc.). As mentioned by the Commentor, no contaminated sites have been identified throughout the Sassafra River watershed.

Given that the TMDL analysis concluded that the "fishing" designated use can be met without any reduction of the watershed loads, at this point further characterization of sources in the Sassafra River watershed is not necessary. However, if in the future additional data leads to identification of existing hotspots, MDE will take the necessary measures to evaluate the newly discover sources and will investigate possible remediation needs/options.

Comment 7:

The Commentor references page 21 of the public comment version of the TMDL report: “Discovering and remediating any existing PCB land sources throughout the upper Chesapeake Bay watershed via future TMDL development and implementation efforts will further help to meet water quality goals in the Sassafra River embayment” and inquires whether there are any solid plans to do this. The Commentor asks whether this suggests that the only plan is to continue TMDL development in other watersheds of the upper Bay and whether no additional efforts will be made to investigate existing PCB sources or to monitor for those sources. The Commentor states that this is not a strong assurance of implementation.

Response 7:

As mentioned in Response 4, MDE concluded that the Sassafra River watershed is not considered to be a significant source of PCBs to the Sassafra River embayment. As the TMDL can be achieved without any reduction to watershed loads, MDE does not plan to continue efforts in characterizing sources of PCBs in the Sassafra River watershed as no significant sources have been identified. However, if in the future additional data leads to identification of existing

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hotspots, MDE will take the necessary measures to evaluate the newly discover sources and will investigate possible remediation needs/options. Furthermore, it has been determined that attainment of the tPCB water quality TMDL endpoints will only be possible with significant reduction in the primary sources (i.e., Chesapeake Bay and bottom sediments). While these reductions are expected to take place over time as the upper Chesapeake Bay concentrations continue to decline, discovering and remediating any existing PCB land sources throughout the Upper Chesapeake Bay watershed can help speed up the attainment of “fishing” designated use in the Sassafra River embayment. TMDL development for the other impaired watersheds through the Upper Bay is one of the tools available to help MDE identify and remediate any significant upstream PCB sources contributing to the tPCB impairment in the Sassafra River embayment.

REFERENCES

EPA (U.S. Environmental Protection Agency). 2002. *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*. Washington, DC: U.S. Environmental Protection Agency.

MDE (Maryland Department of the Environment). 2008. *The 2008 Integrated Report of Surface Water Quality in Maryland*. Baltimore, MD: Maryland Department of the Environment. Also Available at http://www.mde.state.md.us/Programs/WaterPrograms/TMDL/Maryland%20303%20dlist/2008_Final_303d_list.asp.

_____. 2009. *2005 Caged Clam Study to Characterize PCB Bioavailability in the Impaired Watersheds Throughout the State of Maryland*. Annapolis, MD: Maryland Department of the Environment. Also Available at http://www.mde.state.md.us/assets/document/2005_Corbicula_Study_final.pdf.