Summary of Public Comments and Staff Responses

James River, Maury River, Jackson River PCB TMDL Development
Finalized on March 22, 2021

The Virginia Department of Environmental Quality (DEQ) sought public comments from January 13 – February 11, 2021 on the development of a PCB TMDL for the James River, Maury River, and Jackson River watersheds. This comment period followed the project kick-off meeting held January 12, 2021.

Comments were received from five different parties. Individual letters containing the comments and DEQ responses are contained in the following pages. Use the hyperlinks below to jump to the different comment response letters.

Commonwealth of Virginia

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March 22, 2021

Andrea W. Wortzel
Via Email: andrea.wortzel@troutman.com

Response letter to the Virginia Manufacturers Association comments on the James River, Maury River, and Jackson River PCB Total Maximum Daily Load (TMDL) Study

Thank you for your comments during the initial comment period of the James, Maury, Jackson River PCB TMDL development process. Your comments were reviewed by the Virginia Department of Environmental Quality (DEQ) Central Office Water Planning section. The following document includes your original comments with DEQ responses following the comments.

We appreciate your interest in this TMDL project and look forward to working with you on its development.

Sincerely,

Will Isenberg
Water Quality Assessments and TMDL Coordinator
Virginia Department of Environmental Quality
Central Office

Comment Response Document Addressing the Virginia Manufacturers Association Comments during the James River, Maury River, and Jackson River PCB TMDL project initiation public comment period.

Comment:
1) The guidance [TMDL Guidance Memo No. 14-2004, Procedures for reviewing and deriving total PCB concentrations from samples analyzed using low-level PCB method 1668 to be used in the development and implementation of TMDLs] recognizes the limitations of Method 1668, which has yet to be formally promulgated by EPA. Accordingly, the guidance contemplates flagging and correcting the sampling data collected. Similarly, VMA thinks it is important for any sampling work conducted by DEQ to undergo correction for blank contamination as described in DEQ's own guidance.

- **Response: While DEQ allows VPDES point sources to correct their data consistent with the referenced guidance, DEQ does not support the censoring of ambient PCB data. The rationale for this is based on the defined data quality objectives (DQO), where DEQ collects these ambient PCB data for purposes of 1) PCB source identification, 2) PCB fate and transport model development, and 3) for use in Bioaccumulation Factors (BAF) and the derivation of site-specific TMDL endpoints.**
    - **For the first DQO, DEQ mainly collects wet weather flow PCB data to locate and identify potential source areas. Not surprising high flow data tend to have elevated concentrations and are much less susceptible to data correction. For example, corrected PCB concentrations for subset of samples collected during elevated flow conditions ranged from 1,398.01 pg/L to 5,592.33 pg/L and resulted in a corrected concentration that was 0.43% to 4.55% lower than the uncorrected result. In contrast, corrected PCB concentrations for a subset of samples collected during low flow conditions ranged from 89.13 pg/L to 265.28 pg/L and resulted in a corrected concentration that was 50.95% to 88.06% lower than the uncorrected result. With that in mind, there is no benefit to correcting PCB data for purposes of meeting the source identification objective.**
    - **The purpose of the second DQO is for DEQ to generate data under low and high flow conditions that is used to assist with the model development through calibration and validation. To address the potential impact or benefit of using corrected data for this purpose, Biological Systems Engineering (BSE) performed an analysis and determined that "using censored [i.e., corrected] tPCB data for model development would result in little change to the model calibration." This conclusion was a similar to that provided by VIMS in 2014 as it related to model development for the tidal James River PCB TMDL.**
    - **The use of corrected ambient data to address the third DQO would be impactful on the outcome. The utilization of blank corrected ambient data would lead to lower BAF derived endpoints, based on the inclusion of low flow ambient data within the calculations. The resulting impact would include greater allocated reductions with the PCB TMDL plus reduced Waste Load Allocations (WLAs).**

- **It is important to note that for purposes of generating ambient data in accordance with the DQOs described above, DEQ utilizes a laboratory that employs strict controls on the analytical procedures. As a result, for the 2017-2019 PCB sampling effort, the Method Blank PCB median and mean concentrations were 70.13 pg/L and 81.32 pg/L, respectively. Additionally, sampling methods used by DEQ do not use any sampling equipment, thus further limiting the potential for contamination from sources beyond the water sample.**
- **To reiterate, correction of ambient data has a disproportionate impact on samples with lower concentrations compared to samples with higher concentrations. While this has potential to lower TMDL endpoint concentrations derived through the Bioaccumulation Factor (BAF) approach, it has minimal impact on the estimation of TMDL loads. This is because PCBs are hydrophobic and favor bonding to particulates. As a result, PCBs are primarily transported during high flow events when particulate concentrations are high and PCB concentrations are high. DEQ intends to update the TMDL GM No. 14-2004 to reflect this change.**

Comment:
2) VMA urges DEQ to consider the age of the sampling data it is relying upon to develop the TMDL, and whether additional sampling work should be undertaken to ensure that the TMDL is based on the most current, robust and accurate data available.

- **Response: In 2017, an analysis of data needs was conducted and a three year monitoring study was developed. As a result, DEQ collected 93 new fish tissue samples and 26 sediment samples to supplement older datasets. Additionally, 157 water column PCB samples were collected at 63 different sites. Each PCB water column sample was matched by samples analyzed for Total Organic Carbon, Dissolved Organic Carbon, and Suspended Sediment concentrations. Therefore, we believe that we have a robust representation of the watershed both spatially and temporally.**

Comment:
3) Given the ubiquitous nature of PCBs, and recognizing that the presence of PCBs is largely due to historic usage rather than current activities operations, it is important that the TMDL allow for flexible and adaptive implementation measures. Development of pollutant minimization plans is an important tool for achieving any wasteload allocations established in the TMDL.

- **Response: DEQ agrees that flexible adaptive implementation measures are important for the implementation of PCB TMDLs. As such, development of pollutant minimization plans are the intended means for achieving wasteload allocations established in the TMDL.**

Comment:
4) VMA requests that DEQ include David Blye, with Environmental Standards, Inc. and Kerry McAvoy with One Environmental Group on the technical advisory panel for the TMDL development.

- **Response: Thank you for your interest. David Blye and Kerry McAvoy have been added to the TAC.**

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March 8, 2021

Chris French
Via Email: robert_c_french@yahoo.com

Response letter to the Chris French's comments on the James River, Maury River, and Jackson River PCB Total Maximum Daily Load (TMDL) Study

Thank you for your comments during the initial comment period of the James, Maury, Jackson River PCB TMDL development process. Your comments were reviewed by the Virginia Department of Environmental Quality (DEQ) Central Office and Blue Ridge Regional Office Water Planning sections. The following document includes your original comments with DEQ responses following the comments.

We appreciate your interest in this TMDL project and look forward to working with you on its development.

Sincerely,

Will Isenberg
Water Quality Assessments and TMDL Coordinator
Virginia Department of Environmental Quality
Central Office

Comment Response Document Addressing Chris French's Comments during the James River, Maury River, and Jackson River PCB TMDL project initiation public comment period.

Comment:
The issue of MODEF being a source of PCBs is one that Mark Richards should remember well. He can tell you I was the person who discovered the issue while employed in the TMDL program at PRO in the 2006-07 time frame. The facilities you want to look at are those ran by Ingenco. At that time, there were 1 page reports where a facility estimated the about of destruction of PCBs in the MODEF oils they were burning in the on site generators.
I discovered the connection as I was also the point of contact are PRO for EIRs. It was in the review of the either new or existing Ingenico facilities I discovered the connection. Once I discovered, this information was forwarded DEQ Central Office. There was some chatter about it for a time period, but the issue disappeared over time - one presumes due to the lack of resources.
I believe many of the records you may be looking regarding this matter would be archived. I recommend DEQ spend a little time going through the archived records for Ingenico and pulling these reports. In fact, I would be shocked if the air permitting program did not have some similar records as part of the current reporting process.
By this email, I am providing a first hand witness of these reports during my tenure at DEQ. The records are real and do exist. We all know that there is a significant disconnect between the waste/air programs in their handling of PCBs reporting limits and those the water programs through the use of different detection methods (Method 608 v 1668). We also know a common way to dispose of fuels oils with PCBs is to dilute them until they are considered "PCB free" by concentration, where they can then be disposed of (in this case via incineration at a power generation facility). Unfortunately, the incineration temperatures at these facilities are too low to destroy the PCBs, and they pass through the stacks only to be deposited what is believed to be locally, given the weight of the PCB compounds (some being lighter than others).
I do not think this is an issue DEQ can ignore, especially when a number of point source dischargers (e.g. industrial stormwater) & MS4 permittees may unfairly end up with higher WLAs due to an improper accounting of PCBs.
I would strongly encourage DEQ to investigate this issue by directly sampling some of the facilities in question so the proposed TMDLs in the James River basin can use the best and most accurate data available. Please also note, this is an environmental justice matter that affects subsistence fishermen/women and indigenous tribes (due to historic reliance on fishing).

- **Response: Thank you for pointing out this potential source of PCBs. Following your comment DEQ staff conducted a search of all Ingenco air permits and other air permits that have PCB limits. This included 14 Ingenco facilities and seven other facilities. Concerning Ingenco facilities, the burning of mineral oil dielectric fluid (MODEF) no longer occurs. Records show that Ingenco was not receiving MODEF as of 2011. With the exception of one facility that reported 0.0 tons/yr of PCB emissions, no other emissions data were available for the modeling period 2008-2019. With regards to the seven other facilities, records show that no used oil (potentially containing PCBs) was burned during the modeling period.**

Comment:
As a question - why is DEQ still relying on the 1999 Chesapeake Bay Toxics Loading and Release Inventory. That data is old. The atmospheric deposition research coming out of Rutgers in the Delaware Estuary is far more accurate. Back when I was at VCU, we attempted to get a similar study in the James watershed working with DEQ, but the funding did not come through. DEQ was supportive of the proposal and willing to contribute. Again, you will want to discuss this with Mark Richards.

- **Response: The Chesapeake Bay Toxics Loading and Release Inventory atmospheric deposition values are the best available, local data available to DEQ. Resources and funding would be necessary for local atmospheric depositional studies for PCBs and the whole of information and data available provides sufficient basis for move forward with the PCB TMDL development.**

Comment:
By this email, I request to be included as a TAC member for the upper and lower James PCB TMDLs.

- **Response: Thank you for your interest. You have been added to the TAC.**

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March 8, 2021

Joe DiNardo
Rockbridge Area Conservation Council and 50 Ways Rockbridge
Via Email: jmjdinardo@aol.com

Response letter to Joe Dinardo's comments on the James River, Maury River, and Jackson River PCB Total Maximum Daily Load (TMDL) Study

Thank you for your comments during the initial comment period of the James, Maury, Jackson River PCB TMDL development process. Your comments were reviewed by the Virginia Department of Environmental Quality (DEQ) Central Office Water Planning section. The following document includes your original comments with DEQ responses following the comments.

We appreciate your interest in this TMDL project and look forward to working with you on its development.

Sincerely,

Will Isenberg
Water Quality Assessments and TMDL Coordinator
Virginia Department of Environmental Quality
Central Office

Comment Response Document Addressing Joe DiNardo's Comments during the James River, Maury River, and Jackson River PCB TMDL project initiation public comment period.

Comment:
1) The wording that PCBs have been banned since 1979 in the US is somewhat misleading and a misnomer, especially in light of the increasing levels in the environment. Obviously, the loopholes noted via the "unintentional production of PCBs" (heat + Cl + C) = non-PCB transformers (<50 ppm PCBs) and inadvertent manufacture of PCBs (<25 ppm PCBs) appears to allow for the excessive levels observed. The latter requiring lengths of rivers to be considered unsafe and restrictions placed on fish consumption from those locations. It is unclear if the unintentional PCB levels allowed were based on 1979 population needs and did not estimate the growth rate which now includes an additional ~100 million people in our country? Increase in needs causes an increase in demand which causes an increase in supply which causes and increase in unintentional PCB production and pollution.
Similarly, I have been working on sunscreen regulations developed in 1978 that were never updated for safety/efficacy and are also under scrutiny because many of the drug actives (which have endocrine disrupting activity) according to FDA may not be safe for human use … "Because the public record does not currently contain sufficient data to support positive Generally Recognized As Safe and Effective determinations". Unfortunately, our regulatory agencies have become political pawns inhibiting them from updating many critical scientific rulings that negatively impact environmental and human health.

- **Response: Thank you for your comment and the additional information that you provide. It is the goal of this PCB TMDL to identify the different sources of PCBs and allocate reductions in their loads in order to restore water quality and make the fish safer to eat. As such, the TMDL's scope is limited to sources within the James, Maury, and Jackson River watersheds. In this way the TMDL has the ability to make local and meaningful improvements. Additionally, it may be helpful to provide more clarity on these exemptions in Federal Law (Toxic Substances Control Act). Based on the state of the science in the 1970s, the manufacture of PCBs were banned, and other actions were taken to phase out their use where they already existed. For example, transformers with PCB concentrations >2 ppm and <50 ppm were allowed to stay in operation for the duration of their lifespan. An additional exception to PCB regulations is the allowance for inadvertent production of PCBs so long as no product has >50 ppm PCBs and the average concentration in products leaving a manufacturer over a year is <25 ppm PCBs.**

Comment:
2) Another concern that needs to be addressed is that PCBs are considered endocrine disrupting chemicals (EDCs) according to the World Health Organization - WHO (downloaded available if interested: https://www.who.int/ceh/publications/endocrine/en/). Wildlife populations have been affected by endocrine disruption, with negative impacts on growth and reproduction. These effects are widespread and have been due primarily to persistent organic pollutants (POPs). Bans of these chemicals have reduced exposure and led to recovery of some populations. There are several places in the WHO-EDC document that make comments about PCBs … below are just a few examples:

Page 116 "PCB bans and restrictions have led to a decline in PCB concentrations in humans and wildlife over the past few decades, although geographic hotspots still exist where certain PCB congeners persist (Chapter 3.2.1 & 3.2.2). A few biomonitoring studies report PCBs in the brain tissues of mammalian wildlife and humans between 2-50 ng/g (ppb) wet weight. In marine mammals, however, brain PCB levels are higher (up to 450 ng/g or ppb wet weight). Dominant congeners in the brain of mammalian wildlife are coplanar and are similar to those found in humans."
Page 234 "Over time, several POPs (e.g., PCBs, PBDEs and PFOS) have increased and then more recently decreased in most areas where concentrations in wildlife were measured. These decreases are due to restrictions or bans on their use in many countries."
This information would imply that "tangible" bans/restrictions on the levels of PCBs should result in the reduction which is not what is being reported using the current 1979 guidelines.
What's more concerning about PCBs or EDCs in general, is that they have the ability to react additively/synergistically with other EDCs at levels below their known toxicity to produce numerous adverse effects to both the environment and human health (several papers can be found via a simple pubmed.gov or Google search). These EDC interactions are not limited to reactions with just industrial compounds, but can also react with agricultural, personal care, pharmaceutical … etc., EDC chemicals, creating a whole new dimension and challenge for understanding the toxicological impact to life making it more imperative that the loopholes in "banned" chemicals be reevaluated.
It is unclear based on the data if chemicals like PCBs and other POPs can be controlled by using a Total Maximum Daily Load (TMDL) because the impact to both the environment and human health is unknown and, therefore, until these issues can be understood a zero-tolerance policy on unintentional PCB production should be considered. Without doing so, will only allow for "status-quo" with no real push for newer/safer technologies to be developed that could more appropriately meet the needs of the people without PCB usage.

- **Response: Thank you for the detailed information. As a state environmental agency, DEQ is limited to the laws and rules that currently exist. As a result, this project is limited to the scope of PCB TMDL development which is intended to address the fish consumption use for the protection human health.**

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March 22, 2021

Ryan L. Hendrix
Via Email: rhendrix@pfrwta.com
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Response letter to the Virginia Association of Municipal Wastewater Association, Inc. comments on Proposed PCB TMDLs: Lower James & Elizabeth Rivers, Upper James River, Mt. Run

Thank you for your comments during the initial comment periods of the Mountain Run, James, Maury, Jackson River, and tidal James and Elizabeth River PCB TMDL development process. Your comments were reviewed by the Virginia Department of Environmental Quality (DEQ) Central Office Water Planning section. The following document includes your original comments with DEQ responses following the comments.

We appreciate your interest in this TMDL project and look forward to working with you on its development.

Sincerely,

Mark A. Richards
TMDL Team Lead
Virginia Department of Environmental Quality
Central Office

cc: Rebecca Shoemaker, NRO
Jennifer Rogers, PRO
Paige Haley, TRO
Will Isenberg, CO

I. TMDL Efforts Should be Matched to the Underlying Standards

As you know, the human health water quality standard for PCBs and the Department of Health's fish consumption criterion are both predicated on long term (lifetime) human consumption. That is, both are calculated in ways that assume a lifetime of exposure to levels of the contaminant that may increase the risk of health impact beyond a defined *de minimis* level. Given this, we see the task of TMDL development as determining conditions (including wasteload allocations and load allocations) that will over a comparable long term reduce the typical or average water column and consumable fish flesh concentrations to levels below the applicable criteria. This point is reflected not only in the calculations that lead to these criteria, but also in the manner in which the water quality standard is expressed. In the case of those human health criteria, the regulation specifies design stream flows for calculating steady state wasteload allocations. Those are the harmonic mean flow for carcinogen contaminants, and the 30Q10 flow for non-carcinogens. 9 VAC 25-260-140.B, fn. 6. In both cases (carcinogens and non-carcinogens) these are essentially long term flow statistics that effectively approximate and implement the intended long term exposure assumptions.

Some of the Department personnel will recall the debate in which the New River TMDL TAC engaged over this issue. The TMDL contractor initially modeled the respective systems and calculated WLA and other reductions to levels at which the modeling projected a scenario in which there were essentially zero instantaneous instream exceedances of either the water column standard or the calculated waterway-specific target concentrations. VAMWA and some of its members argued that this was wrong because of the reasoning addressed above. It was also inconsistent with the methodology used by EPA's contractors in developing the Lower Potomac TMDLs and other TMDLs that VAMWA cited. That error was eventually corrected.

Accordingly, we urge the Department to make sure that the TMDL contractors for these projects carefully coordinate their methodologies with the underlying standards.

DEQ Response: To the extent that is practicable, DEQ will utilize long term exposure factors to account for the human consumption of fish tissue that contains unsafe levels of Polychlorinated Biphenyls (PCBs), a potentially carcinogenic contaminant.

With regard to the PCB study project identified as the James, Maury, Jackson PCB TMDL study, and other on-going studies that includes Lewis Creek in Staunton and Mountain Run near Culpeper, a harmonic mean flow year will be utilized in setting allocations and reductions. For these studies the harmonic mean flow year will be selected within the TMDL segment by comparing each flow year during the 10 year TMDL modeling period to the long term annual harmonic mean flow record. The flow year that most closely resembles the long-term harmonic mean flow will then be selected. This process is consistent with that used in the New River PCB TMDL study.

For the tidal James River watershed, while the harmonic mean flow can be utilized similarly to the free flowing rivers and streams, there are a couple of options that DEQ and VIMS would like to discuss during the Technical Committee Advisory Subcommittee meetings scheduled for March 25th (Piedmont region) and March 30th (Tidewater region). The rationale for not using the long-term harmonic mean flow is based on the concept that the fate and transport dynamics for PCBs

in an estuary depend on resuspension and depositional processes of sediment. Setting allocations to the long-term harmonic mean flow will increase the amount of time it takes to meet the instream TMDL condition as erosion of the bottom sediment will not occur or will be greatly reduced. Conversely, if high (wet) flows are used, a significant portion of the existing PCBs in the sediment will be transported outside the estuary in a nonrealistic manner. VIMS is proposing that the more realistic approach is to use a 3-year flow period that represents high, medium and low flow conditions, where after repeatedly running the model will lead to meeting the TMDL condition more quickly when compared to using the harmonic mean flow. This approach was used for the Baltimore Harbor PCB TMDL in Maryland (MDE, 2011).

Lastly, until DEQ's contractors have run various modeled scenarios used to address the frequency rate of TMDL endpoint exceedance within each segment, it is difficult to know which will be the most applicable approach to use. The scenarios to be considered for the modeled instream PCB concentration at the TMDL boundary area will include the arithmetic mean, the median, the 95% Upper confidence limit, and the 90th percentile (i.e., 10% exceedance rate which is consistent with the fish tissue assessment approach). Recall 9 VAC 25-260-140 does not include a footnote that stipulates a frequency for exceeding the numeric WQC of carcinogenic pollutants. In these instances, the default assumption can be "Not to Exceed."

MDE, 2011. Total Maximum Daily Loads of Polychlorinated Biphenyls in Baltimore Harbor, Curtis Creek/Bay, and Bear Creek Portions of Patapsco River Meshohaline Tidal Chesapeake Bay Segment, Maryland. Maryland Department of the Environment, p 168.

II. The Development of any Target Numbers Should be Limited and Based on the Adopted, Controlling Criteria

What has driven the impaired waters listings and this TMDL process is the VDH fish consumption advisories, based on the VDH 100 parts per billion (ppb) threshold. The Department's adopted 640 pg/1 water quality standard is also relevant. We note from the Department's presentations an apparent focus also on the 18 ppb fish concentration number, which we understand to be considered to correlate with the 640 standard. We note the consistent use of the 18 ppb number on the Department's fish concentration graphs along with VDH 100 ppb number.

We believe that the development of the TMDLs should focus on and use as their ultimate targets the VDH fish concentration number, and not the 18 ppb number; as well as the adopted 640 pg/1 standard. The process should not also focus on the parallel 18 ppb number because VDH is the agency with the responsibility for establishing this threshold and using it in its public health programs, and there should not be conflicting criteria between the sister Commonwealth agencies. The 640 pg/1 number is a proper target because it is a relevant binding regulatory requirement.

Although we recognize the use of the 18 ppb fish concentration number, and in some of these efforts a site-specific water column number (water target concentration) that correlates with the localized fish data, we see these as tools for the TMDL development process, rather than appropriate targets. For these reasons we advocate the use of the 100 ppb and 640 pg/1 values as the ultimate targets, and we believe the TMDL should avoid references to the 18 ppb number or calculated water targets as if they were binding requirements, or reference to these values as ultimate compliance points. If the processes are designed to eventually achieve the VDH number

and allow the removal of the fish consumption advisories, and to achieve consistency with the 640 pg/1 water quality standard, that should be defined as the ultimate end point and conclusion to the process.

DEQ Response: *Since the establishment of the 640 pg/L Water Quality Criterion (WQC) in Virginia's Water Quality Standards on January 29, 2010, DEQ has applied the same risk-based assumptions to the assessment of fish tissue. As the commenter notes, the 640 pg/L WQC is directly linked to the 18 ppb fish tissue value. Both the WQC and the 18 ppb fish tissue value are derived from the same risk-based equation using Federal Environmental Protection Agency (EPA) guidelines. The WQC is derived from the fish tissue value through the application of a bioconcentration factor in the denominator. As such, the WQC was designed to prevent water column concentrations of PCBs that could ultimately result in the bioconcentration of PCBs in fish tissue at such levels that potential risk to consumers of fish is increased. Moreover, the fish tissue value of 18 ppb is utilized to provide a benchmark of acceptable risk in the fish tissue itself that is consistent with EPA guidelines. Both the 640 pg/L WQC and the 18 ppb fish tissue screening value are protective of the "fishable" component of the general standard 9 VAC 25-260-10 A, which requires that water quality be supportive of "...production of edible and marketable natural resources, e.g., fish and shellfish".*

DEQ's fish screening value of 18 ppb and VDH's value of 100 ppb diverge in part because they serve different purposes. VDH consumption advisories seek to mitigate human health risks once a waterbody has become contaminated, whereas DEQ's fish screening value is designed to mitigate the risk of excess contamination in all of Virginia's waters. With the different programmatic intentions in mind, it is important to note that the derivation of VDH's fish tissue value diverges from EPA guidance in that it inserts additional assumptions into the equation. For example, the equation includes a factor that accounts for how long individuals are expected to live in a certain region. While this is an appropriate assumption for the population in general, not all communities can relocate outside the watershed. Specifically, many communities of lower economic means that supplement their diets with fish from state waters do not have the means to relocate. As such, DEQ's role, consistent with EPA guidelines, is to ensure that excess contamination in fish above 18 ppb shall not be exceeded in order to protect all individuals in the population.

Lastly, DEQ acknowledges the impact of fish tissue impairment listings on the regulated community. Although the fish tissue screening value of 18 ppb is directly linked to the WQC, like the VDH value, it is not listed in code. As such, DEQ outlines the process for determining water quality impairments with the 18 ppb threshold value in the Integrated Report Water Quality Assessment Guidance. This guidance is issued every two years with a 30-day comment period, a public meeting, and consistent availability on the agency website. Through this, DEQ provides transparency and opportunity for public comment on the use of the 18 ppb fish tissue threshold for impairment listing decisions.

Based on the reasons described above, DEQ intends to use the 18 ppb fish tissue threshold and 640 pg/L WQC as the dual TMDL endpoints that must be protected in order to meet water quality standards. The fish consumption use for impaired waters can either be restored by the 640 pg/L WQC, or by a site-specific endpoint in cases where the WQC is not protective of the 18 ppb fish tissue threshold.

III. There is a Risk that the Detailed Hydrologic and Risk Analysis Components may be Beyond the Accuracy of the Underlying Data

We always consider in these projects the detailed hydrologic, risk analysis and other technical tasks undertaken to be interesting from a technical and risk management standpoint. However, we are concerned that the precision of these analyses may mask the uncertainties inherent in the process. Some of the factors that we believe contribute to uncertainty and to results that should be considered estimates at best are the known inaccuracy of PCB analytical procedures at part per quadrillion concentrations; variations in fish concentration data; the (because of costs and resources) relatively small fish, water column and sediment data sets that form the factual/data basis of this work; and the substantial uncertainty in the air deposition numbers and the mechanics of the air deposition concept itself.

Accordingly, although we recognize the limitations of resources, we recommend that the final TMDL itself recognize and state these reservations.

DEQ Response: The commenter mentions that there do not appear to be enough sample results, which leads to additional uncertainty in the TMDL development process. While the labor and associated analytical costs inhibit the number of fish and water samples that can be collected within a particular watershed, there were more than adequate fish tissue results to list these watersheds as impaired and to maintain those listings. As related to meeting an adequate number of water and sediment samples, having limited data is a very common observation regardless of the impairment and pollutant associated with TMDL development, and is a main reason for employing the use of a fate and transport model. Lastly, a required element within the TMDL process includes the Margin of Safety, which takes into account uncertainties associated with the model and other aspects of TMDL development.

To ensure valid data are generated for use in these studies, strict quality assurance protocols are followed for field collection of fish and water samples and applied to the analytical procedures. First, it was mistakenly assumed that variations in fish tissue tPCB concentrations are based solely on faulty analytical procedures. Variations in fish PCB concentrations can be due to several factors such as fish size, time of year the samples are collected and whether or not the sample result was part of a composite (i.e., 5-10 fish). Regarding the use of method 1668 for ambient water column and sediment samples, DEQ has now been using this analytical method in Virginia for PCB studies since 2005 and has amassed more than 1,000 statewide ambient water samples. DEQ has complete confidence in the tPCB results due to the adherence of the strict collection and analytical guidelines included within TMDL Guidance Memo No. 09-2001. Guidance for monitoring of point sources for TMDL development using low-level PCB method 1668. DEQ has also competitively selected a laboratory that is capable of routinely meeting the strict analytical guidelines included within the protocol.

Regarding the mechanics of atmospheric deposition, please refer to comment V. below. Recognizing the need to generate better information related to the atmospheric deposition of PCBs, DEQ assembled a team of experts and pursued opportunities to perform such a study during a three-year period beginning in 2011. Unfortunately, these studies were not funded. Alternatively, for TMDL development, it is an accepted practice to use appropriate literature based values in

lieu of actual data for loadings development. This is a common practice for Bacteria TMDL development where literature based loading values are applied for a variety of sources.

Lastly and as applicable, uncertainties will be addressed within the final PCB TMDL reports for each project. This will in part occur within the MOS and by managing the TMDL implementation through staged or adaptive management.

IV. We recommend a Focus on Contaminated Sites Rather than Pass-Through Sources

With rare exceptions Publicly Owned Treatment Facilities are pass-through sources of PCBs, meaning that any PCBs are from the potable water systems that feed the POTWs' domestic sewer system and other customers, and in turn from the surface water and ground water raw water supplies that feed the potable water systems. Although the TMDLs must address POTWS and include WLAs, we believe that a more useful exercise involves the examination and consideration of sites from which there is or may be PCB contaminated runoff beyond background concentrations. The depictions of historic and current contaminated sites within the affected watersheds that are included in the current Department public meeting and TAC presentations illustrate the prevalence of such sites in some of these TMDL projects.

In light of the recognized inadequacy for human health-based water quality efforts of the federal TSCA-based PCB soil cleanup levels, a primary focus on such sites would be a useful and effective approach.

DEQ Response: Whether or not POTWs are sources themselves of PCBs, each POTW is, a point source loading of PCBs, and as such requires a Waste Load Allocation (WLA) as part of the TMDL. This comment is not a TMDL issue, but rather raises an implementation issue regarding VPDES permitting. With that said, for those POTW systems in Virginia that have monitored their influent for PCB concentrations, anecdotal evidence suggests that in most instances there is at least a magnitude difference in the existing load entering the waste treatment facility than from the load that would be expected from a potable water system. In fact, the usual difference in observed concentration between the influent and treated effluent ranges from an 85% to 95% reduction in effluent (DEQ's PCB Data Base), which is indicative of the elevated loadings entering these facilities. Lastly, POTWs with collection systems that are old and have leaky infrastructure would be prone to receiving PCB contamination from the associated commercial and urban land use areas. PCB trackdown studies within the wastewater collection system can be an effective way to determine the origin of the source(s).

As the commenter is aware, an accounting of all known contaminated sites is also included in PCB TMDL study reports, which is expressed in the LA portion of the equation. While specifically addressing how reductions from contaminated sites will be attained is a topic more suited for TMDL implementation, when opportunities do arise to achieve TMDL based reductions from these sites, there is collaboration between staff from DEQ's Water Planning Division and staff from the Land Division. An example of an on-going collaborative effort is taking place within the Lewis Creek PCB TMDL study area in Staunton, Virginia. In this watershed, the operator of a contaminated site is working with DEQ's Voluntary Remediation Program (VRP) toward achieving reductions that are consistent with the impending TMDL. Similar work is occurring in the James, Maury, Jackson River PCB TMDL study area in Richmond. In collaboration with

DEQ's Water Planning Division, DEQ's VRP is working with the developer of a contaminated site to identify opportunities for voluntary remediation of PCBs.

V. The TMDLs Should Fully Consider Atmospheric Deposition

Although we recognize that atmospheric deposition is highly complex and poorly defined, it is also clearly an important factor. We also recognize that atmospheric deposition is probably more an effect of the exchange of PCB loads from soils and surface waters with the atmosphere, than an independent source. As such, the TMDL calculations should consider the reductions in atmospheric loadings and deposition that will certainly occur as PCB loadings in the water column and sediments are slowly reduced through natural processes, further sedimentation, and the correction of the relatively rare active sources of PCBs.

DEQ Response: Atmospheric deposition to land and water and the exchange back to the atmosphere is extremely complex. Atmospheric deposition theoretically occurs both on the land and surface water throughout the watersheds of interest. While the deposition of the dissolved PCB constituent is applied at a steady rate, there is uncertainty with depositional rates associated with different land uses. Studies (Offenburg et al., 1999; Van Ry et al., 2002*) have shown a significant depositional gradient can exist between urban/industrial (elevated), commercial and rural areas (lower). A difference in molecular weight PCBs due to re-emission from localized sources between urban (higher molecular) and rural (lower molecular) areas was also identified (Du et. al., 2009).*

In the non-tidal watersheds, atmospheric deposition on the water surfaces is modeled as a constantly applied rate of dissolved PCBs deposited evenly across all reaches using the MONTH-DATA block in HSPF. Atmospheric deposition of PCBs on the land surfaces adsorb to soil particles. These soil-attached PCBs enter the stream network during runoff events. PCB loadings from the land surfaces to the stream network are modeled using the loading rate associated with the HPSF wash off potency factor (POTFW), which varies by land use~~s~~. HSPF does not account for exchange with the atmosphere.

In the absence of more recent information from the tidal portion of the watershed, there are available atmospheric PCB results from the tidal estuary including the Chesapeake Bay. The measured atmospheric deposition on the watersheds in the Chesapeake Bay ranges from 1.6 to 16.3 $\mu g/m^2$/year of tPCBs (CBP, 1999). This study estimated a tPCB wet deposition of 1.1 kg/year and a dry aerosol deposition of 1.0 kg/year for the James River below the fall line, which is on the lower end of the deposition rate in the Bay. In general, the atmospheric tPCB deposition rate decreases over the years. Given the water surface area of the James River of 6.81×10^6 m^2, the estimated total atmospheric tPCB deposition rate is 3.08 ($\mu g/m^2$/year). Using the same rate, the estimated deposition rate for the watershed is about 26.41 kg/year. According to the Delaware River watershed study (Totten et al., 2006) an approximate 1% PCB load was discharged to the estuary. VIMS used 3.08 ($\mu g/m^2$/year) loading as a constant deposition rate for the watershed as background deposition. Only a portion of the deposited tPCB will be discharged to the estuary. The estimated runoff is about 2%, which is about 5% of preliminary estimation of the total PCB loading

The rate of 3.08 $\mu g/m^2$/year will be the deposition rate to the surface of the James River estuary. The James River PCB model is an organic carbon-based model that includes algae particulate

and dissolved carbon sorbed PCBs, and free dissolved PCBs. The dissolved PCB phase, which will be dynamically computed, interacts with the atmosphere by transporting between the James River and the atmosphere. In the regions with the higher water PCB concentrations, PCBs will be modeled as fluxing to the atmosphere. Total PCB gaseous concentrations in Baltimore Harbor region varied seasonally, ranging from 67 to 1400 pg/m3 with a mean concentration of 330 pg/m^3 (0.3 pg/l) (Bamford et al., 2002), which is much lower than the mean water column concentration (3,960 pg/l) from the Baltimore Harbor (Shen et al., 2012). The mean and median tPCB concentrations from the tidal James River watershed are 15,560 and 755 pg/l, respectively. The mean gaseous concentration of 0.3 pg/l can reasonably be applied to the tidal James River model. This also suggests that tPCBs will be transported to the atmosphere given high mean tPCB concentration in the James River.

Bamford, H.A., F. C. Ko, J.E. Baker. 2002a. Seasonal and Annual Air-Water Exchange of Polychlorinated Biphenyls across Baltimore Harbor and the Northern Chesapeake Bay. *Environmental Science & Technology.* 2002, *36, 4245-4262*.

Chesapeake Bay Program (CBP). 1999. Chesapeake Bay Basin Toxics Loading and Release Inventory. U.S. Environmental Protection Agency. Chesapeake Bay Program, Annapolis, MD. EPA903-R99-006.

Du, S; Wall, SJ; Cacia, D; Rodenburg, LA. 2009. Passive Air Sampling for Polychlorinated Biphenyls in the Philadelphia, USA Metropolitan Area. *Environ. Sci. Technol.* 2009, *43,* 1287-1292.

Offenberg., J.H., J.E. Baker. 1999. Influence of Baltimore's Urban Atmosphere on Organic Contaminants over the Northern Chesapeake Bay. Journal of the Air & Waste Management Association. 1999, *49, 959-965*.

Shen, J., B. Hong, L. Schugam, Y. Zhao, J. White. 2012. Modeling of Polychlorinated Biphenyls (PCBs) in the Baltimore Harbor. Ecological Modelling. 242. 54-68.

Totten, L., Panangadan, M., Eisenreich, S.J., Cavallo, G., Fikslin, T., 2006. Direct and indirect atmospheric deposition of PCBs to the Delaware River watershed. Environmental Science and Technology 40, 2171–2176.

Van Ry, D. A.; Gigliotti, C. L.; Glenn, T. R. IV; Nelson, E. D.; Totten, L. A.; Eisenreich, S. J. 2002. Wet Deposition of Polychlorinated Biphenyls in Urban and Background Areas of the Mid-Atlantic States. *Environ. Sci. Technol.* 2002, *36,* 3201-3209.

VI. The TMDLs Should Include an Implementation Discussion

Although Implementation Plans are not part of these TMDL projects, each TMDL should include an implementation discussion. Consistent with our comments above, that discussion should focus on any identified actual active sources of PCBs, including in appropriate cases the multiple known historic or current contaminated sites in the watersheds. Consistent with the Department's past and current practice, the implementation discussion should refer to the use of Pollutant

Minimization Plans for POTWs discharging PCBs above the applicable WLAs, and leading ultimately to routine monitoring in conjunction with POTW pretreatment programs, rather than permanent separate PMP efforts.

DEQ Response: *For PCB TMDL studies, it has been a common practice for DEQ to include a chapter in the report that addresses both TMDL Implementation and Reasonable Assurance. A good example includes Chapter 7 from the New River PCB TMDL (VT-BSE, 2018). The information included in the chapter provides the required Reasonable Assurance element necessary to attain EPA's approval, as well as information that highlights both the implementation of PCB loadings from point sources (WLAs) and non-point sources (LAs). For the impending PCB TMDLs as applicable, DEQ will consider including additional but general information that emphasizes contaminated sites within the LA section of this chapter.*

As the commenter noted, Implementation Plans are not part of these TMDL projects. As such, DEQ will not address site-specific Pollutant Minimization Plans (PMPs) within the TMDL study report. Specific detail to address this topic is more appropriate within PMP guidance that is currently under development.

VT-BSE, 2018. PCB Total Maximum Daily Load Development for Reed Creek, the Upper New River, Peak Creek, Walker Creek, Stony Creek, and the Lower New River. VT-BSE Document No. 2018-0001, July 2018.

Commonwealth of Virginia

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March 8, 2021

William T. Wilson
Jackson River Preservation Association (JRPA)
Via Email: wtw1130@aol.com

Response letter to the Jackson River Preservation Association's comments on the James River, Maury River, and Jackson River PCB Total Maximum Daily Load (TMDL) Study

Thank you for your comments during the initial comment period of the James, Maury, Jackson River PCB TMDL development process. Your comments were reviewed by the Virginia Department of Environmental Quality (DEQ) Central Office and Blue Ridge Regional Office Water Planning sections. The following document includes your original comments with DEQ responses following the comments. Each comment number or letter is identical to those used in the January 20th email.

We appreciate your interest in this TMDL project and look forward to working with you on its development.

Sincerely,

Will Isenberg
Water Quality Assessments and TMDL Coordinator
Virginia Department of Environmental Quality
Central Office

Comment Response Document Addressing the Jackson River Preservation Association Comments during the James River, Maury River, and Jackson River PCB TMDL project initiation public comment period.

Comment:

1. The Jackson River Preservation Association (JRPA) has been in existence since about 2013. We have worked with DEQ, the DWR, and the USACE since that time to preserve and protect the Jackson River. It has been quite a trip. Most of our efforts have involved the Jackson River above Covington but we have also had issues in, and below, Covington. For instance, we dealt with an Alleghany County sewerage spill on Potts Creek; a CSX oil spill in Clifton Forge; and permits for sewerage discharge by governing bodies. The "pulses" from Gathright Dam have also been one of the things we monitored.
2. The "impaired rivers" project now in progress is new to us, so please pardon our lack of knowledge. I think all of our members, and the entire community, would like to see a cleaner Jackson River from WestRock down to Iron Gate where the James River begins.

- **Response: We appreciate your commitment to the health of the Jackson River.**

Comment:

3. The following are my thoughts, for such weight as they may have:
   a. I think we all know that WestRock in Covington is the big industrial presence that must be considered, but we also have three, maybe four governing bodies to also be taken into account, in the "point source" department.
   - **Response: There are four municipal wastewater treatment plants, two individual industrial permits, and four industrial stormwater general permits. These permittees were selected based on their potential to discharge PCBs into receiving waters.**

Comment:

   b. I would think that in your analytical process DEQ would test the Jackson River above WestRock before testing just below WestRock and just below the mouth of Dunlap Creek. Below Dunlap Creek I am not sure where the pipes are that discharge stormwater or treated sewerage, but those locations might also be tested. Potts Creek comes into the Jackson River in south Covington and testing might be done above and below that location. I think Alleghany County pumps some of its sewerage into the Covington Treatment Plant but I am not sure where that effluent pipe is located.
   c. Below Covington, I think Karnes Creek comes into the Jackson River near Low Moor and there is a creek coming in just above the Dabney S. Lancaster Community College which may be carrying the runoff from the Kim Stan Landfill, which, as you know, is a Super Fund project.
   d. Below DSLCC, I believe Smith Creek comes into the Jackson River in Clifton Forge where there is pollution and treated sewerage from CSX and the Town of Clifton Forge
   e. Simpson Creek comes in south of Clifton Forge and then we have the Town of Iron Gate.
   - **Response: DEQ collected water column samples for PCB analysis at four Jackson River sites for a total of 16 samples. Sampling sites are selected for a myriad of reasons including their relation to sources, major tributaries, flow gages, and other**

considerations like cost effectiveness and watershed coverage. The upstream most sampling location was just downstream of the Gathright Dam at river mile 44.14. The next site down river is about two thirds of a mile below Dunlap Creek at river mile 23.61 at City Park. This receives waters with discharges from the Hot Springs Sewage Treatment Plant, WestRock, and industrial stormwater discharges from Chemtrade Solutions LLC – Covington and Material Handling Solutions LLC. The next site downstream is at river mile 6.67 near Dabney S. Lancaster Community College, or about 2.75 miles downstream from Low Moor. This site receives waters with discharges from an additional four permits. These include two municipal Wastewater Treatment Plants (Covington and Low Moor) and stormwater discharges from the Peters Mountain landfill and stormwater discharges from the WestRock Low Moor Converting Plant. Finally, there is a site at river mile 0.38 near Iron Gate at the Rt. 727 bridge. This receives waters with discharges from one more point source, the Alleghany County Wastewater Treatment Plant.

With regards to the Kim Stan Landfill, it is no longer considered a potential source of PCBs as a result of clean-up work and recent monitoring data. In 1980, it was confirmed that waste oil containing PCBs had been improperly disposed of at the Kim Stan Landfill resulting in contamination. After the landfill was shutdown in 1990, work to address the contamination occurred, including covering the landfill with soil, installing stormwater management and erosion control features, and pumping out 400,000 gallons of landfill leachate. When the site was revisited in 1997, EPA identified more issues with landfill leachate, contaminated groundwater and surface water. As a result, the landfill was added to the Superfund Program's National Priorities list in 1999. Work from this point on includes installation of a multi-layer cap over the landfill, installation of a leachate collection system, installation of piping and associated equipment to convey leachate to the Low Moor Waste Water Treatment Plant for treatment, performance upgrades to the treatment plant, other work to ensure the longevity of the controls, and routine groundwater monitoring. As of 2010, groundwater monitoring data in multiple locations showed no detectable concentrations of PCBs. As such, PCBs are not considered a contaminant of concern at the Kim Stan Landfill.

Comment:

f. So, I would think all of these "point sources" should be tested by DEQ above and below the points of entry.

g. Historical data of these "point sources" should also be important to analyze during times of high and low water. I know DEQ and the DWR already have a lot of data from these sources.

- **Response: Regarding point source loads, DEQ has PCB concentration data from the Covington WWTP and Alleghany County Wastewater Treatment Plant in addition to the main WestRock facility. For the other point sources, DEQ is able to estimate their loads based on the type of industrial class that they fall into. DEQ maintains a database of point source data from which we are able to calculate median concentrations for different Standard Industrial Classes. Additional information is provided in this technical resource document. Additionally, for all non-stormwater discharges, DEQ has monthly flow data, which will be used to calculate the PCB loads in the model. It is worth noting that loads from these point sources and other**

nonpoint sources will be modeled and compared to observed monitoring data to ensure that the model is calibrated and capable of replicating these observed values. As such, the model provides for the linkages between sources, transport, and fate.

Comment:

h. A number of people fish the Jackson River from Covington down but few, if any, eat the fish. The fish caught are mostly smallmouth bass, largemouth bass, fallfish, and a few trout. A few years ago, lesions were found on some of the bass but that has not been seen in recent years, as far as I know.

i. The Jackson River used to be terribly polluted years ago because of Westvaco but over the years the river has improved remarkably.

- **Response: DEQ appreciates this additional information.**

Comment:

4. The JRPA is interested in being a part of DEQ's efforts to remove the Jackson River from the "impaired rivers" category. We would like to be involved at every stage and, to the extent that we can help, want to do so. Our resources are limited so we will just do what we can. Ours will be a spirit of co-operation.

5. We have a committee that does water monitoring so perhaps we could help DEQ in that regard.

- **Response: Thank you for your dedication to the health of the Jackson River. DEQ will work to include you in all watershed restoration planning activities for the Jackson River watershed. Additionally, we welcome collaboration with the water monitoring data that you collect. In addition to the value that the data brings to your organization, citizen monitoring data can be used to put waters on the impaired waters list or remove them, provide information for TMDL development, track the restoration of waters where an approved TMDL exists, and target waters for future DEQ monitoring. If you are interested in sharing your water quality data with DEQ, we would be happy to discuss that process.**

Comment:

6. As a follow-up to what was said at the "Webinar" on January 12, 2021, we would like to know more about DEQ's methodology for determining the amount and kind of pollution and step by step DEQ's plan for getting the Jackson River out of the "impaired rivers" category.

- **Response: DEQ uses the water quality process to identify and restore impaired waters. The water quality process involves routine monitoring and assessments of that monitoring data to determine whether or not the monitored waterbodies are meeting water quality standards. When waters are not meeting water quality standards, they are put on the impaired waters list. Once on the impaired waters list, DEQ is required by state and federal law to develop TMDLs, which determine the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. This maximum amount is determined through the TMDL development process using a computer model of the watershed. The computer model pulls together the pollutant sources and other watershed characteristics (e.g., flow, precipitation, soils, slope, etc.) to model the existing loads of the pollutant. With an endpoint concentration selected that meets water quality standards, the model is run to identify the maximum allowable load of the pollutant (i.e. the**

TMDL). The difference between modeled existing loads and the modeled TMDL identifies the amount of reductions that are necessary to meet water quality standards. These reductions are allocated to the different sources of the pollutant. Once the TMDL is approved by the State Water Control Board and EPA, TMDLs are then implemented in point source permits and through other voluntary, incentive-based actions for unregulated nonpoint sources. The goal of TMDL implementation, of course, is to restore the waters so that they meet water quality standards. The TMDL being developed for the Jackson River PCB impairment is intended to do just that. Since the water quality impairment in this case are PCBs in fish tissue, the TMDL is being developed for this contaminant.

With regards to other water quality impairments in the Jackson River watershed, a TMDL has previously been developed for the lower sections of the Jackson River to address the impairment related to degraded benthic macroinvertebrate communities. In that case, because the water quality impairment was a degraded ecological community, the pollutant(s) causing that degradation had to be identified through a stressor analysis process. As a result, nitrogen and phosphorus were identified as the most probable stressors of that community and therefore TMDLs were developed for both pollutants. Fortunately, through the implementation of those TMDLs, some of those waters have been restored and meet water quality standards for biological health. Additionally, there exist some bacteria and temperature impairments above the Gathright Dam and some bacteria and dissolved oxygen impairments below the dam. These coincide with the PCB impairments being addressed by this TMDL. As time and resources permit, DEQ will continue to address these impairments through TMDL development or other means of water quality restoration. Currently, DEQ is developing our priorities list for TMDL and TMDL alternative development over the next six year window, spanning 2022-2028. Before this priorities list is finalized, there will be an opportunity for public comment.