U.S. EPA's Proposed Rule:
Mercury Water Quality Criterion to Protect Aquatic Life in Idaho
Transcript for Public Hearing #1 for the Proposed Rule
Tuesday, May 28, 2024 – 9:00 a.m. to 11 a.m. Mountain Time

(Slide 1) Kary Phillips: Hello and welcome to today's online public hearing for the U.S. EPA's Proposed Rule: Mercury Water Quality Criterion to Protect Aquatic Life in Idaho. This session is sponsored by the United States Environmental Protection Agency's Office of Science and Technology. The purpose of today's public hearing is to provide background on the proposed rulemaking and then for interested parties to provide oral comments on the proposed rule. I am Kary Phillips of Tetra Tech, a contractor to the EPA, and I will be moderating today's hearing with support from my colleagues. Thank you for joining us.

Kary Phillips: Before we introduce our speakers today, let's start by going over a few housekeeping items. You should be connected to this session through your computer or mobile device. At this time, you should see a slide titled "Logistics: Options for Audio."

You can listen to the presentation through your computer or mobile device speakers but will need a microphone if you would like to make oral testimony. If you do not have speakers or a microphone on your device, you may use a phone to call in. We will provide detailed instructions on how to provide oral testimony after the presentation.

Kary Phillips: Instructions for calling in are available in the menu on your screen to the right of the Unmute button. Select the arrow to the right, then "Switch to Phone Audio" and follow screen prompts. Following the on-screen instructions for calling in will link your phone line to your computer and allow you to use controls on your screen, for example, to mute or unmute yourself, or raise your hand to speak.

Kary Phillips: Alternatively, you may also call in directly to +1 (301) 715-8592. The Meeting ID is 827 3392 6425. Once you are connected to the audio, if you hear an echo, please turn off your computer speakers. If you have any technical difficulties, please chat with Tech Support.

If you would like to download a copy of the slides for today's presentation, a PDF of the slides has been posted to the chat window for all participants. If you do not see the PDF, please chat with Tech Support. A copy of the slides will also be posted to the EPA's website after today's presentation.

Kary Phillips: Please note that all lines have been muted upon entry to avoid any echo and sound issues. If you have unmuted your device or phone to test your audio, please mute yourself on the screen, or by pressing star six.

Today's public hearing will be recorded and transcribed, and all oral comments will be considered part of the official record for this rule. As such, when developing the official response to public comments and finalizing the rule, the oral comments provided today will become part of the official record along with the written public comments submitted via the docket for this rulemaking. If you provide an oral comment during today's online hearing, you do not have to submit the same comment in writing in order for it to be included in the official record. If you are interested in making a written comment, directions will be provided during this hearing. Please note that the EPA will not respond to comments today; however, the EPA will respond to the oral comments received at this hearing—along with all

comments it receives during the comment period—in the EPA's response-to-comments document that will accompany the final rulemaking. Also, the EPA will not be answering questions today.

Today's presentation for the online public hearing has been reviewed by the EPA's staff for technical accuracy. However, the views of those making an oral comment and their organizations are their own and do not necessarily reflect the views of the EPA. Mention of commercial enterprises, products, or publications does not mean that the EPA endorses them.

(Slide 2) Kary Phillips: Now that we have completed the discussion of housekeeping items, let's start today's online public hearing. The EPA's staff who are present for today's hearing include: Kelly Gravuer and Erica Fleisig. And with that, we will begin the presentation by the EPA. I will now turn it over to Kelly to provide a brief overview of the proposed rule.

(Slide 3) Kelly Gravuer: Thanks so much, Kary. Hi, everyone. On April 3, 2024, the EPA Administrator signed a rule proposing a revised water quality criterion to protect aquatic life from the harmful effects of mercury in Idaho water bodies. That proposed rule was published in the Federal Register on April 9, 2024. The rule proposes to establish mercury levels, which can be measured either as the concentration of mercury in the water column, or as the concentration of mercury in fish tissues that, if not exceeded, will support healthy populations of aquatic organisms in Idaho waters. Next slide.

(Slide 4) Kelly Gravuer: I'll now talk about some background for the rule making. Clean Water Act section 101(a)(2) establishes a national goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water, whenever attainable. To support aquatic life uses, including healthy populations of fish and shellfish, states must establish aquatic life criteria for their surface waters. States and authorized tribes must submit any new or revised water quality criteria to the EPA for review, and these water quality criteria must be approved by the EPA before they can be used for Clean Water Act purposes, such as wastewater discharge permitting. Next slide, please.

(Slide 5) Kelly Gravuer: If the EPA disapproves a new or revised water quality criterion because it is inconsistent with the requirements of the Clean Water Act, the EPA must notify the state and specify the changes to meet such requirements. If the state does not adopt changes to comply with the Clean Water Act, the EPA must promptly propose a new or revised water quality criterion. In 2005, Idaho submitted water quality standards revisions that removed the state's numeric aquatic life criteria for mercury. In that submission, Idaho stated that the state's existing narrative criteria for toxics, which are surface waters of the state shall be free from toxic substances in concentrations that impair designated beneficial uses, would apply instead of the numeric criteria, and that the state's existing human health criterion for methylmercury would be protective of aquatic life in most situations. In 2008, the EPA disapproved those water quality standards revisions, stating that the previously approved numeric criteria remained applicable. As a result of a court order following litigation on that 2008 action, the EPA Administrator was obligated to sign a rule proposing revised aquatic life mercury criteria for Idaho by April 4, 2024. Next slide, please.

(Slide 6) Kelly Gravuer: Sources of mercury. Mercury is a naturally occurring metal that can be enriched in some mineral deposits and is often present as an impurity in coal. Mercury can get into waterbodies through deposition of mercury that was released to the air, leaching for mercury-containing rocks, or discharges of wastewater containing mercury. Human-caused sources of mercury include coal burning, industrial processes, and mining, while natural sources include volcanoes and hot springs. Wildfires may also mobilize mercury and result in increased surface water concentrations. Next slide, please.

(Slide 7) **Kelly Gravuer:** Effects of mercury on aquatic life. Mercury can cause neurological damage in aquatic organisms and has been associated with reduced growth and reproduction. Aquatic organisms take up mercury more rapidly than they eliminate it, causing mercury to bioaccumulate in their tissues. Mercury also biomagnifies, meaning that mercury concentrations in tissues tend to be higher in organisms that are higher on the food chain. Next slide.

(Slide 8) **Kelly Gravuer:** Aquatic life criteria. Aquatic life criteria are concentrations of pollutants in surface water or aquatic life tissues that are not expected to pose a significant risk to the majority of species in a given environment. These criteria provide for the protection and propagation of fish and shellfish. To develop aquatic life criteria using best available science, the EPA searches for data on a wide variety of aquatic species, including fish, amphibians, and invertebrates, and then synthesizes those data according to the EPA's national guidelines for deriving aquatic life criteria. Generally, aquatic life criteria consists of three components: magnitude, which is the maximum level of the pollutant in the water that will not present a significant risk to aquatic organisms; duration, which is the time period over which pollutant levels are averaged before comparison with the magnitude; and exceedance frequency, or how often the magnitude can be exceeded while still ensuring that aquatic life is protected. Next slide, please.

(Slide 9) **Kelly Gravuer:** Idaho mercury criterion development. The primary route of mercury toxicity to aquatic organisms is by dietary uptake – in other words, the consumption of contaminated prey over time – whereby mercury continues to accumulate in their tissues and can eventually reach levels where it has harmful effects. The EPA, therefore, based its mercury criterion on scientific studies in which researchers fed mercury-contaminated food items to aquatic organisms over time and then measured effects related to the organisms' survival, growth, and/or reproduction. From each study, the EPA recorded the tissue mercury concentration corresponding to a low level of adverse effect that is different from controls but not expected to cause significant effects at the population level. The EPA then summarized these tissue concentrations by species. Next slide, please.

(Slide 10) **Kelly Gravuer:** Mercury bioaccumulation varies widely among Idaho species as expected in light of mercury's tendency to biomagnify based on the species' diet. The EPA therefore used a modified method to develop the proposed tissue criterion elements that considered the differences in sensitivity to mercury among species as well as their potential to bioaccumulate mercury. First, because the two most sensitive species, which were amphibians, also had by far the lowest potential to bioaccumulate mercury, the EPA analyzed the effect of removing these two species before calculating the proposed tissue criterion elements. That analysis confirmed that the resulting values were protective of all species, including those amphibians. Second, the EPA included adjustment factors in the proposed tissue criterion elements to ensure that fish that are higher on the food chain are protected if the only tissue data available are from fish that are lower on the food chain. Next slide.

(Slide 11) **Kelly Gravuer:** Because mercury tends to preferentially accumulate in muscle tissues, fish muscle tissue or fillet samples are often used to assess tissue mercury levels. However, only whole-body tissue samples may be available for some fish or other aquatic organisms for which separating out muscle tissue can be challenging, for example because they are small. The EPA therefore developed a muscle to whole-body tissue conversion factor from the scientific literature and developed two proposed fish tissue criterion elements, muscle tissue and whole-body tissue, so that either type of sample could be collected and compared to its respective element. Next slide, please.

(Slide 12) **Kelly Gravuer:** A tissue criterion value can be compared to tissue data collected from organisms in a water body to provide a direct estimate of whether aquatic life in that water body is likely to be experiencing adverse effects. However, tissue data can sometimes be challenging to obtain. To

provide options for implementation, the EPA also developed a proposed water column criterion element using bioaccumulation factors, or BAFs, to be used when fish tissue data are unavailable. These bioaccumulation factors equal the mercury concentration in tissue, divided by the mercury concentration in water. The EPA assembled field-collected paired tissue and water mercury data, predominantly from Idaho, and used these data to derive a data set of species-specific mercury bioaccumulation factors, or BAFs, for fish, amphibian, and invertebrate species. Next slide.

(Slide 13) Kelly Gravuer: From this BAF data set, the EPA then assigned the best matching BAF, from the same species if it was available, or making a taxonomy or ecology-based match if not, to each species for which tissue-based sensitivity data were available. The EPA used that BAF to translate the tissue-based sensitivity value to a water column-based sensitivity value, which accounts for both the inherent mercury sensitivity of each species as well as its potential to bioaccumulate mercury. These water column-based sensitivity values were used to derive the proposed water column criterion element, following EPA's national guidelines' calculation method. If both fish tissue data and water column data are available for the same water body, the EPA is proposing that the fish tissue data result take precedence because it is the more direct measure of toxicity. Next slide, please.

(Slide 14) Kelly Gravuer: The duration and frequency of the fish tissue criterion elements. The duration is an instantaneous measurement, because a fish tissue sample that is collected at a specific point in time, or instantaneously, integrates and represents mercury bioaccumulation over several years. The frequency is not to exceed, because fish tissue mercury concentrations are relatively slow to respond to any decrease in mercury inputs. For the duration and frequency of the water column criterion element, the duration is thirty days, which was derived by considering observed durations of mercury methylation processes affecting trophic transfer and of mercury bioaccumulation and elimination processes in aquatic organisms. The frequency is not more than once in three years on average, based on the ability of an aquatic ecosystem to recover from stress caused by a toxic pollutant such as mercury. Next slide, please.

(Slide 15) Kelly Gravuer: Here is the proposed criterion table. You see that there is a fish muscle tissue criterion element, a fish whole body tissue criterion element, and a water column criterion element. The fish muscle tissue criterion element is 225 nanograms of total mercury per gram wet weight of fish tissue; the fish whole-body tissue criterion element is 162 nanograms total mercury per gram of wet weight fish tissue; and then the water column criterion element is 2.1 nanograms of total mercury per liter based on a whole water sample, so unfiltered. As I just mentioned, the duration of the fish tissue elements is instantaneous measurement and the frequency is the average tissue concentration must not be exceeded. The duration of the water column criterion element is thirty days, and the frequency of the water column criterion element is not more than once in three years on average. As you can see, there are a variety of footnotes here in this criterion table, kind of covering some of the issues that I have already mentioned in this presentation such as the converting between muscle and whole-body tissue, the trophic adjustment factors, and other things. I will leave this here for a minute or two so you can read those. Of course, you can also read them in the slides that are posted in the chat as well as in the proposed rule itself because this is the table directly from the rulemaking.

[Paused for 15 seconds]

Alright, let's move to the next slide for now.

(Slide 16) Kelly Gravuer: Alright, so next steps. For more information on this proposal, we do encourage you to go to the EPA's website, https://www.epa.gov/wqs-tech/mercury-criterion-protect-aquatic-life-idaho, where you can find the link to the proposed rule in the Federal Register. You can find the technical

support document for the rule detailing the scientific methods, and then there is also the link to the docket where you can make your written comments. There will be a second public hearing tomorrow evening. The public comment period for this proposed rulemaking closes on Monday, June 10. Next slide, please.

(Slide 17) Kary Phillips: Thank you, Kelly. In a moment, we will provide instructions for making an oral comment today, but first we will provide instructions for submitting written comments in one of the following ways. Again, if you provide oral comments during today's online hearing, you do not have to submit the same comment in writing. However, if you plan to submit a written comment, you may do so through the website at regulations.gov, which is our preferred method, or you may mail your comment or submit a written comment via hand delivery. The instructions for submitting a written comment through these mechanisms are explained in more detail on this slide. Remember, when submitting a written comment please make sure to reference the Docket ID Number EPA-HQ-OW-2023-0325. I will pause here for a few moments to allow time to record this information.

[Paused for 15 seconds]

Kary Phillips: We will now open the hearing for interested parties to make an oral comment. If you would like to ask a question or make a comment, please raise your hand. Depending on the device you are using, there are different ways to raise your hand. If you are on a computer or internet-based mobile device, click on the Reactions button in the menu on the bottom of your Zoom window. If you do not see a Reactions button on your computer, hover towards the bottom of your Zoom window, and a menu bar should appear. Over the Reactions button, select Raise Hand. If you called in using your phone, please press star nine on your phone to raise your hand.

When it is your turn to speak, the host will call on you by name or by the phone number you dialed in with. At that time, you can unmute yourself by pressing the unmute button on your screen or dialing star six on your phone. Please feel free to turn on your video while you are speaking. If you have technical issues, please start a chat with technical support. Remember, the EPA will not respond to comments today; however, the EPA will respond to oral comments received at this hearing—along with all comments received during the comment period—in the EPA's response-to-comments document accompanying the EPA's final rule. Also, the EPA will not be answering any questions during the hearing today.

Each commenter will be announced before providing an oral comment. Each commenter will have a maximum of five minutes to make an oral comment. A timer will appear on the screen indicating approximately how much time each caller has left. Commenters are responsible for watching their own time. Each commenter will be given a 10-second warning using the timer appearing on the screen. At the five-minute mark, the slide will read "Time is up" and commenters will be muted.

If you provided your oral comment and were stopped after five minutes, you can resume making your comment after all commenters have had the opportunity to provide their comments. Please raise your hand at that time and wait for your name to be called. When it is your time to make an oral comment, your name will be announced, and you will be able to unmute yourself. If you called in using your phone, your phone number will be announced, and you will be able to unmute yourself. Please state and slowly spell your name for the official record and if applicable, provide the name of your organization. After the self-introduction, your five-minute time will start. We will now begin the public comment process. There may be a short pause before the first commenter is introduced.

Alyssa, do we have any commenters in the queue?

Alyssa French: Hi Kary, I do not see any commenters in the queue currently.

[No commenters from public hearing]

Kary Phillips: Okay we will stay on the line. If there are no commenters and 15 minutes pass with no comments, the hearing will end early. You are welcome to stay with us or depart the meeting. If you have a comment at this time, please use the raise hand function.

[5 minutes pass by]

Kary Phillips: We have no commenters in the queue at this time. We will stay on the line in case there are some commenters. If there are no comments and another 10 minutes pass with no comments, the hearing will end early. You are welcome to stay with us or depart the meeting. If you have a comment at this time, please use the raise hand function.

[5 minutes pass by]

Kary Phillips: We have no commenters in the queue at this time. We will stay on the line in case there are additional commenters. If there are no commenters and another 5 minutes pass with no comments, the hearing will end early. You are welcome to stay with us or depart the meeting, and if you have a comment, please use the raise hand function. We have no commenters in the queue at this time. We will stay on the line in case there are some commenters.

[5 minutes pass by]

Kary Phillips: At this time, I'd like to conclude today's public hearing. Thank you to everyone who joined us. Remember, if you would like to provide a written comment, you can submit one to the docket for this rulemaking. That ends our hearing for today. Thank you again for joining us.