U.S. EPA's Proposed Rule:
Mercury Water Quality Criterion to Protect Aquatic Life in Idaho
Transcript for Public Hearing #2 for the Proposed Rule
Wednesday, May 29, 2024 – 4:00 p.m. to 6:00 p.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 858 2078 4412. 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**: Hi everyone, and thanks for joining us today. 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. The 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**: 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.

(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. Idaho stated that the state's existing narrative criteria for toxics, which is 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 these 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 from 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, please.

(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 synthesizes those data according to the EPA's national guidelines for deriving aquatic life criteria. Generally, aquatic life criteria consist of three components: first, magnitude, which is the maximum level of the pollutant in the water that will not present a significant risk to aquatic organisms; second, duration, which is the time period over which pollutant levels are averaged before comparison with the magnitude; and third, 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 via 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 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 please.

(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, one for muscle tissue and one for 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. Bioaccumulation factors are calculated by dividing the mercury in an organism's tissue by the mercury concentration in the 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, please.

(Slide 13) Kelly Gravuer: From this BAF data set, the EPA assigned the best-matching BAF, which would be from the same species if it was available, or making a taxonomy or ecology-based match if not, to each species from 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 result take precedence because it is the more direct measure of toxicity. Next slide, please.

(Slide 14) Kelly Gravuer: Now looking at the duration and frequency of the criterion elements, for the fish tissue criterion elements, the duration is instantaneous measurement, and that is 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 of the fish tissue criterion elements 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 decided upon considering observed durations of mercury methylation processes affecting trophic transfer and a mercury bioaccumulation and elimination processes in aquatic organisms. The frequency of the water column criterion element 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 with all three elements and their magnitude, duration, and frequency. The fish muscle tissue criterion element is 225 nanograms of total mercury per gram of wet weight 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 of water, collected from a whole water or unfiltered water sample. You can see the duration and frequency elements that I just mentioned. These are the instantaneous measurement duration for the fish muscle tissue and fish whole-body tissue criterion elements and the thirty-day average duration for the water column criterion element. Then the frequency of average tissue concentration must not be exceeded for the two fish tissue elements and not more than once in three years on average for the water column criterion element. You will notice that this table also has several footnotes, covering some of the issues that I have discussed throughout this presentation, such as the collection of tissue and water samples, and the trophic adjustment factors if fish tissue sample from a lower trophic level fish is collected. I'll just pause here for a minute so you can read through these if you're interested. I'm just noting that you also have the PDF of the slides that was posted in the chat if you would like to refer to these later.

[Paused for 15 seconds]

Alright, let's go to the next slide, please.

(Slide 16) Kelly Gravuer: For more information on this proposal, we do encourage you to go to the EPA's website for this rulemaking, 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. On that website you can find the technical support document describing in a lot more detail the scientific analyses that went into the development of this criterion, and you'll also find a link to the docket where you can make your

written comments. The public comment period for this proposed rulemaking does close on Monday, June 10, 2024. Next slide please. I'll hand it back over to Kary.

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 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: Kary, I do not see any commenters in the queue.

[No commenters from public hearing]

Kary Phillips: We will pause here for a few moments to wait for any commenters.

[1 minute passes 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 15 minutes pass without any 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 more participants in the call, so 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.