



Board of Environmental Quality

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Meeting Minutes for May 26, 2022 Business Meeting

May 26, 2022 | 9:00 a.m. PDT

Business Meeting

Panhandle Health District

35 Wildcat Way, Kellogg, ID

Also via Zoom and Teleconference

APPROVED:

Kermit Kiebert, Chairman

Dr. John R. MacMillan, Secretary

Board Members Participating

Kermit Kiebert, Chairman
Mark Bowen, Vice Chairman
Dr. John R. “Randy” MacMillan, Secretary
Kevin Boling, Member
Carol Mascareñas, Member
Nick Purdy, Member
Beth Elroy, Member

Department of Environmental Quality Staff Participating

Jess Byrne, Director
Kristin Ryan, Deputy Director
Hannah Young, Sr Deputy Attorney General for DEQ, Legal Counsel to the Board
Brent King, Deputy Attorney General for DEQ
Paula Wilson, Hearings and Rules Coordinator
Caroline Moores, Operations Sr Analyst
Dr. Mary Anne Nelson, Surface & Wastewater Division Administrator
Jason Pappani, Surface & Wastewater Bureau Chief
Michael McCurdy, Waste Management and Remediation Division Administrator
Dan McCracken, Regional Administrator-Coeur d’Alene
Andy Helkey, Kellogg Remediation Manager
Dana Swift, Remediation Bureau Chief
Heather Hodges, Financial Specialist, Principal/Budget Analyst

Other Participants

Jim Keating, EPA Headquarters
Kelly Gravuer, EPA Headquarters
Hahn Shaw, EPA Region 10
Lisa Kusnierz, EPA Region 10
Matt Szelag, EPA Region 10
Johanna Bell, Association of Idaho Cities
Alex LaBeau, Idaho Association of Commerce & Industry
John Eaton, Idaho Association of Commerce & Industry

Niko Lostra, Bilbao Company
Will Tiedemann, Idaho Conservation League
Doug Durban, Brown and Caldwell
Loren Franklin, KC Harvey Environmental
Fred Andes, Barnes & Thornburg
Steve James, JUB Engineers
Pete Stayton, South Fork Sewer District
Will Smith
Andrea Ramirez

Roll Call

Chairman Kermit Kiebert called the special meeting of the Idaho Board of Environmental Quality to order at 9:00 a.m. He reviewed the principles of remote meeting etiquette and welcomed all meeting participants.

A voice roll call was taken with six board members in person and one board member via Zoom video conference.

Additional participants were asked to type their names and associations into the meeting chat feature as a record of their participation. Telephone participants were also recognized.

Public Comment Period

Chairman Kiebert opened the floor for the public to address the board on topics not specifically on the agenda.

Pete Stayton South Fork Coeur d'Alene River Sewer District

Mr. Stayton provided an overview how metals contamination pertains to the sewer district specifically. Mr. Stayton noted that Dan McCracken, DEQ, has been a tremendous asset, and they have a good relationship with DEQ. He introduced Steve James with JUB Engineers who would later talk about cleanup efforts.

Mr. Stayton explained that the sewer district serves 8400 customers in the silver valley in over 20 service areas, covering all the cities in the Silver Valley and 20 river miles. The district has two wastewater treatment plants. The legacy waste in the area impacts the entire community. DEQ's cleanup work in the area is beneficial and appreciated. The sewer district faces unique challenges because they are in a superfund site. There are metals compliance requirements in both treatment plant discharge permits and a 20-year compliance schedule that goes to 2034. The deadline will come up quickly based on when they need to plan for improvements and meeting limits. The district has been doing their own upstream water data collection and discovered drinking water sources exceed site-specific water quality criteria and are close to discharge effluent amounts. The Silver Valley is low-income area, and the district is already in

debt from recent compliance activities. They have made significant improvements to wastewater treatment plants that improve water quality, but the metals will be extremely expensive to address. Mr. Stayton stated that we need to question if the environmental benefit actually outweighs the cost given they have fairly small contribution to the South Fork of the Coeur d'Alene River and the impact of legacy mine waste. He concluded by thanking DEQ for the partnership and looking forward to working together in the future.

Steve James with JUB Engineers

Mr. James echoed Mr. Stayton's comments about working with DEQ as partners. Mr. James explained that the Silver Valley has legacy mining issues that have flowed downstream to become issues for the sewer district. They are trying to find a way to deal with metals and allow the sewer district to continue treating wastewater. He noted that that if the metals don't align with the water quality criteria, it is not necessarily the fault of the district but that the metals are present in the basin. Mr. James stated that DEQ has the ability to develop policy to address the issue, although he understands DEQ is constrained by rules.

He noted a few possible options for the future. The discharge permit needs to match what happens in the environment. There are metals in the environment and drinking water that pass through the wastewater treatment plant. Mr. James suggested intake credits, where the amount of contaminant in the input is subtracted from the output. This would include groundwater and drinking water as upstream side and may be a way to subtract out metals. Superfund has a policy related to technical impracticability. If there is no way to treat the metals that come in, DEQ could decide it is not reasonable to treat for the metals using an attainability analysis. He noted DEQ's idea for Spokane River which is de minimums standard for metals contribution. The municipal discharges have little metals compared to environment, so it does not make sense to hold discharge standards to that level. All this could be captured in a TMDL in the future. If none of the options can be done, Mr. James said DEQ could look at longer term compliance schedules and these policy decisions that need to be part of how we address these issues going forward.

Kevin Boling asked which metal is of most concern. Mr. Stayton replied zinc is the hardest to address in the treatment process because it is soluble in nature and passes through activated sludge. Lead and cadmium are better removed, so zinc is the highest priority. Mr. James agreed that zinc takes huge amounts of energy to remove.

Kevin Boling asked Dan McCracken how we reconcile their concerns with the CWA. Mary Anne Nelson responded on behalf of DEQ that it would explore the options Mr. James raised, such as the attainability analysis. DEQ can also use site-specific criteria particularly with the environment in the Silver Valley.

Will Tiedeman, Idaho Conservation League

Will Tiedeman, Idaho Conservation League, recognized the scope of meeting it to focus on Silver Valley and concerns but wanted to discuss arsenic and legacy mining outside of the Silver Valley. He notes

there are issues with the Atlanta Gold mine. Currently the mine is on forest service land but under the control of Atlanta Gold. He noted that they were responsible for wastewater treatment for arsenic, but according to EPA's weighted pollutant tool, Atlanta Gold is the number one illicit discharger for arsenic. Mr. Tiedeman noted there are obvious challenges to the site because the operator is somewhat or fully defunct at this point.

Director's Update

Director Jess Byrne provided an update to the Board on the following DEQ activities and initiatives.

Legislative Update: DEQ had three pieces of legislation that passed during the 2022 session.

Senate Bill 1243 changed the composition of the Board of Environmental Quality. The existing statute has limitations on whom can serve as board members. However, there is an additional limitation required by the Clean Air Act that stipulates no more than three board members can derive a significant portion of their income from a facility with an air quality permit. DEQ has been complying with the requirement through executive order but codified it into statute this year. It does not impact the current board composition.

House Bill 1559 set up the Confined Animal Feeding Operations (CAFO) Improvement Fund. Idaho has an Agricultural BMP program set up to provide state matched fund dollars for projects that reduce nonpoint source pollution going into surface water. The new program is similar but focuses specifically on reduction contaminants to water from CAFOs. DEQ's Mary Anne Nelson is working with partners to put together the group established in statute to determine projects that receive funding.

Senate Bill 1254 eliminated the car emission inspection program (inspection and maintenance or IM program) in Idaho. The state had a statute that required inspection and maintenance programs when local areas were above a threshold for air pollution. Ada and Canyon Counties had the programs. Ada County had a federally mandated program that is about to expire, and Canyon County has had a state-run program administrated by DEQ. The program has had diminishing returns over the last ten years as vehicles are more efficient. Cars are the biggest source of air pollution, but it is now the quantity of cars, not the individual cars themselves. The program does nothing about the quantity of cars. The air program is now looking into other means to reducing emissions such as electric vehicles or mass transit. The state program will sunset in July 2024. The federally mandated approval should sunset at the same time. DEQ is waiting for approval from EPA to remove it.

For the first time in three years all agency rules were passed. DEQ does not need to operate on temporary rules this year.

Ms. Elroy asked Director Byrne if the IM program repeal is consistent with other states. Director Byrne replied that yes, both Washington and Alaska eliminated their programs in the last five years. Individual cars are much more efficient now, so their contribution is less.

FY2 DEQ Appropriation Overview: Director Byrne showed the budget for FY23 that begins July 1, 2022. DEQ's total budget is \$145 million, a 102% increase from FY22. It supports 387 full time employees, which is an increase of 8 from FY22. We had such a significant increase because we received a large portion of American Rescue Plan Act (ARPA) funding. The Governor recommended a large amount of funding for DEQ. The 8 positions we received are associated with the ARPA funding. State employees also received a 3% change in employee compensation shift for raises and \$1.25 per employee to distribute based on merit.

Every year when DEQ requests additions to next year's budget there is the opportunity for supplemental budget changes. There were four in the 2022 legislative session. One was a general fund transfer of \$5 million into the Agricultural BMP program. One was a \$1.5 million in federal dollars through ARPA to the Triumph Mine Tunnel. The state manages the legacy mining issues for the triumph contaminated site. The state has been using state funds to manage the project and requested to use federal ARPA funds. The next request was \$5 million for the CAFO funds explained earlier. The last request was \$44,000,000 of general fund into the water pollution control account to ensure the state has enough funding to match the money received through the Bipartisan Infrastructure Law. The state has to match 20% of the federal funds.

DEQ also asked for a number of increases to the budget. We received an IPDES permit writer supervisory position with \$123,800 dedicated funding from permitting fees. We received \$91,000 in general funds for an additional Solid Waste Analyst in the state office. DEQ has been understaffed in solid waste and has been challenged as the state population grows. We will likely be requesting more solid waste positions in the future. DEQ also received \$147,000 increase in general funds to spread out across small, contaminated site work. DEQ also received \$185,000 increase in general funds to support Total Maximum Daily Loads (TMDL) work. DEQ is required to develop new TMDLs and review existing TMDLs every 5 years and needed more resources to complete the work. We initially requested \$60,000, but the Governor's office recommended more funding based on the importance of the work. \$110,000 will go specifically to TMDLs and \$75,000 will go to water quality monitoring for USGS. USGS will match that. We also requested one-time funding of \$200,000 for testing related to changes to management of waste with very low levels of radioactivity. We have a rulemaking coming up that will address changes to the management of TENORM (technologically enhanced naturally occurring radioactive material). As the rules currently read, any level of radioactivity has to be disposed of at the one permitted hazardous waste facility or outside of the state. When DEQ updates the rule, it would like to add a de minimums level threshold that would allow for solid waste disposal. The funding will go towards hiring a contractor to do sampling on drinking and wastewater facility waste.

Over the next five years, DEQ will receive \$370 million in ARPA funding. \$70 million will go to contaminated site cleanup: some to Triumph mine, \$20 million will go to nutrient reduction in Lake Coeur d'Alene, and some funding will go to general contaminated site cleanup. \$300

million will go to drinking and wastewater infrastructure. DEQ received roughly \$1.4 billion in requests for projects. Over \$500 million was from the city of Boise and \$900 were from smaller cities. The Board will meet in June to review and approve of funding plan for the \$300 million. The intent language requires that small, lower income municipalities receive the funding. We can also fund some projects for which we already had funding agreements. Projects have stalled due to inflation, so we will make up the gaps with this funding. ARPA will be a huge workload for the agency, but we are working to be as prepared as possible. We have eight limited services positions that will support the work: 5 with drinking and wastewater programs and three analyst positions for the contaminated sites.

Ms. Mascarenas asked Director Byrne if there is any PFAS work covered under these budget categories. Director Byrne replied that there is no funding to cover it right now. It is still early to do the work in Idaho. Within the \$44 million from the Bipartisan Infrastructure Law (BIL), there is significant funding that could go toward PFAS work if facilities see a need. We are not asking this current fiscal year but can next year if we need. Idaho does not have the PFAS sources that other states have.

Mr. Boling commented that it appears DEQ does have numerous shovel ready projects to fund. He also asked, if we staff up because of the significant funding increases, will we struggle after they are no longer available. Director Byrne replied that the federal funding must be spent by 2026, so the projects we fund need to be shovel ready. We will work closely with all the systems to determine their readiness. DEQ anticipates that when the 5 years of limited service are finished, we will ask for at least some of those positions to become permanent through a shift in funding from dedicated sources.

Mr. Boling asked Director Byrne if we are actively working on the issue with Atlanta Gold as explained earlier in the meeting. Dr. Mary Anne Nelson responded that DEQ is aware of the issue although it is not actively working on it.

Chairman Kiebert commented that DEQ will have a lot of upcoming mining work to do. Director Byrne concurred that mining is increasing in Idaho and that translates to more work for DEQ.

Chairman Kiebert asked if the Midas Gold project is permitted. Director Byrne replied that DEQ has been working with them on their permits, but they are not quite finalized. The bulk of the approvals they need are from the federal government.

General Agency Operations Update: New Senior Management staff:

Katy Bergholm is the Regional Administrator in Pocatello. Katy came from the mining industry. Troy Saffle is the Regional Administrator in Idaho Falls. He was previously a Regional Manager in the office.

Michael Camin is the Regional Administrator in Lewiston. He was previously a Regional Manager in the office.

Hannah Young is the new lead DAG for the Attorney General's office staff assigned to DEQ . Lisa Carlson retired.

There are a lot of new staff, and we are experiencing a lot of turnover with retirements and people leaving for new opportunities. We are trying to recruit and retain staff. Director Byrne is concerned that without adequate staffing we will not be able to provide our services. We are trying recruitment and retention bonuses. Our turnover rate is near 14%. We are hiring people earlier in their careers with less seasoned staff to train them.

Ms. Elroy asked what percentage of our positions are currently open. Director Byrne responded that is around 10 to 12%. We are able to do retention bonuses with the money left from salary savings.

Board Business

1. Approval of minutes

- Action item—Approval of meeting minutes
December 3, 2021
February 24, 2022

Motion: Motion to approve both December 3 and February 24 minutes was initiated by Dr. Randy MacMillan

Second: Motion was seconded by Kevin Boling

Vote: The motion carried unanimously

2. Water Quality Standards: *Docket No. 58-0102-2201*

- Action item—Pending rule
Human Health Criteria for Arsenic (Negotiated under *Docket No. 58-0102-1801*)
Dr. Mary Anne Nelson, Surface and Wastewater Division Administrator
Jason Pappani, Surface Water Bureau Chief

Dr. Mary Anne Nelson Docket No. 58-0102-2201 Introduction.

Good morning, Mr. Chair and members of the Board. My name is Mary Anne Nelson. I am the Administrator for the Surface and Wastewater Division at DEQ. With me today is Jason Pappani, the Surface Water Bureau Chief. We are here today to present to you Docket 58-0102-2201, Updates to Arsenic Criteria for Human Health. I will cover the background and basics of the rulemaking, and Jason will provide more detailed information on the criteria development and negotiations.

Arsenic is widely distributed in the Earth's crust and is found in nature mostly in mineral form. Anthropogenic sources include metal mining and smelting, pesticide applications, coal

combustion, as well as wood and waste incineration. It is found in the air, water, and soils of Idaho.

Arsenic poses a risk to human health from multiple exposure routes including ingestion and inhalation and as such is regulated under the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act. Specific to the CWA, arsenic is one of the priority pollutants that has been regulated under the CWA since 1976. Arsenic is regulated under the CWA to protect both aquatic life and human health. The proposed rule before you today is specific to the beneficial uses related to the protection of human health, that is contact recreation and domestic water supply.

DEQ initiated this rulemaking in response to a 2016 disapproval of the water quality criteria submitted in 2010. Initially, that 2010 criteria package was approved by EPA, however; following a lawsuit and subsequent settlement agreement with Northwest Environmental Advocates, EPA informed DEQ that it would be disapproving the criteria established in 2010 as well as criteria established in 1999. As part of the settlement agreement, EPA was required to ensure that an updated state or a federally promulgated criteria was in place by the end of 2019. DEQ, EPA, and the plaintiff agreed to provide an extension to the agreement until 2023 to provide EPA time to update the national integrated risk assessment information specific to arsenic and for the state to gather information and generate its own criteria.

DEQ is bringing the proposed rule to you today to ensure that we can move forward with a state generated arsenic criteria based on state specific data. We will be providing more details on the history of arsenic criteria later in this presentation.

DEQ initiated this negotiated rulemaking in 2018. Since the beginning of this effort, DEQ has held 13 negotiated rulemaking meetings with stakeholders to discuss several key items including arsenic's prevalence in the natural environment, speciation, bioaccumulation, inputs to the human health criteria equation, and a proposed monitoring study. To identify inputs to the human health criteria equation that make sense for Idaho waters, DEQ pursued and was appropriated funding to conduct a statewide monitoring effort that collected water and fish tissue samples from sites around the state. The results of that study played directly into our proposed criteria before you today.

DEQ solicited comments after each rulemaking meeting on the information presented during the meeting. Four drafts of rule language were prepared and presented to the negotiated rulemaking committee.

Attendees representing 8 associations including:

- Idaho Association of Commerce and Industry (IACI)
- Idaho Mining Association (IMA)
- Idaho Rural Water Association (IRWA)
- Association of Idaho Cities (AIC)
- National Council for Air and Stream Improvement

- Northwest Pulp & Paper Association
- Idaho Ground Water Appropriators
- Idaho Conservation League (ICL)

Municipal representatives from 4 cities:

- Meridian
- Boise
- Post Falls
- Coeur d'Alene

Tribal representatives from 4 tribes:

- Kootenai Tribe
- Nez Perce Tribe
- Shoshone-Bannock Tribe

Federal and state agencies participating included:

- US EPA
- Washington Department of Ecology
- Montana DEQ
- Colorado Department of Public Health, Water Quality Control Division

Others participating representing 16 individual companies and law firms:

- HDR
- Stoel Reeves
- Veritas Advisors
- ETS
- JUB Engineers
- Clearwater Paper
- Arcadis
- KC Harvey Environmental
- Klepfer Mining Services
- Windward Environmental
- Brown & Caldwell
- Nutrien
- Western Wood Preservers Institute
- Benchmark Environmental
- Tetra Tech
- Perpetua Resources

What is the estimated cost to the regulated community?

A review of current IPDES permits to determine which have effluent limits for arsenic show eight facilities (mines) with arsenic limits of 0.15 mg/L for industrial storm water activities, three with effluent limits of 10 ug/L for ground water remediation activities, and 5 mining facilities with effluent limits under individual permits. Seven drinking water treatment facilities have monitoring requirements and 25 individual municipal permits have monitoring requirements. Monitoring requirements are often included in permit if there is a concern that the pollutant may cause or contribute to an exceedance of the water quality standard. Of those 25 with monitoring only, calculation of the reasonable potential to exceed criteria has been varied over the years, particularly since the 2016 disapproval and EPA's view that the 1995 criteria of 0.02 and 6.2 ug/L were the CWA effective criteria.

The proposed criteria provide two avenues for a permitted entity to show compliance with water quality standards: one – measure the concentration of arsenic in fish tissue, or two – measure the ambient water concentration compared to the water column element of the criterion. Costs associated with gathering and analyzing water samples are significantly less than those associated with gathering and analyzing fish tissue samples. For example, a water sample analysis costs about \$120 where a fish tissue sample costs \$315. Cost of sampling equipment for fish tissue monitoring may include electroshockers, netting, boats, personnel training, and safety equipment. Costs for water sampling may be similar excluding the electroshockers and netting. Depending on the sampling location and size of receiving water, a boat may be helpful even in water sampling, although probably not necessary. For compliance with the recreation use (Fish Only) criterion, either a fish tissue sample or water column samples may be used. Further details on exactly how that is envisioned will be presented later.

DEQ anticipates that there may be an increase in costs to those facilities that do not currently have effluent limits but may need to have them in the future. By providing a water column element to show compliance, DEQ believes that those costs may be minimized as compared to requiring fish tissue sampling.

DEQ worked diligently with the various stakeholder groups over the last four years to negotiate many of the elements of the proposed rule. However, there were some issues where consensus was not achieved. These include the use of a water column element in the recreational use criterion along with a superseding fish tissue element. Jason will go into much more detail as he presents the rule but in summary:

DEQ chose to retain the water column element in consideration of written comments provided throughout the process from ICL and EPA. We also choose to include the fish tissue element as the superseding element when that data is available in consideration of comments provided by AIC and IACI. Translation of the fish tissue element to a water column value that is different from the water column element criterion continues to be an area of concern for EPA as use of a water column element in the criterion concerns AIC.

AIC and IACI also requested that the water column element be based on a regression analysis of statewide data to generate a bioaccumulation factor. DEQ chose to retain a trophic level geometric mean and aligns with EPA guidance for developing bioaccumulation factors. The regression analysis generated a water column element value of 13 ug/L, 3 ug/L higher than the disapproved value of 10 ug/L.

This rule regulates an activity regulated by the federal government. The proposed rule is not more stringent, nor broader in scope than the federal regulation. The proposed rule utilizes state flexibility in developing criteria that are specific to Idaho conditions and relevant to the surface waters of the state. Idaho specific data have been gathered and used in generating the proposed criteria.

Jason Pappani presentation detailing the changes made to 58.01.02 Water Quality Standards.

DEQ PowerPoint Presentation – Revision of Idaho’s Human Health Criteria for Arsenic

Thank you for giving me some time to present to you today about some significant work that we have engaged in over the past 4+ years. I will be presenting on rule Docket No. 58-0102-2201, update to Idaho’s Human Health Criteria for arsenic, which was negotiated under Docket No. 58-0102-1801. I am going to start by giving some brief background on human health criteria and how we apply those in Idaho, touch on why we are proposing revised arsenic criteria, then go over some of our discussions from the negotiated rulemaking. I’ll talk about the specific genesis of the proposed rule, and then if we have questions, we can have some time for discussion.

Under the CWA, human health criteria (HHC) are derived from a set of equations that take into account different factors: a chemical’s toxicity, the risk of increased cancer rates, and population data related to exposure from eating contaminated fish and drinking contaminated water. Two different HHC are derived to protect humans from two different exposures to protect two different uses:

Water and Fish criteria are based on what concentration of a pollutant in water would protect humans exposed through consumption of fish AND consumption of water. Based on both accumulation in fish tissue, and direct uptake through drinking water. Water and Fish criteria apply to the Domestic Water Supply use. Only a fraction of Idaho waters are designated for DWS.

Fish Only criteria are based on what concentration of a pollutant in water would protect human health through the consumption of fish ONLY and based on the accumulation of the pollutant into fish tissue. In Idaho, the fish only criterion applies to the recreation use category. Calculation of Fish Only criteria uses Bioaccumulation Factor- the ratio of a particular pollutant in water to its concentration in fish tissue - and provides a concentration of the pollutant in water that would ensure safe tissue concentrations.

There are approximately 96,500 miles of rivers and streams in Idaho. All Idaho streams are designated or presumed to support contact recreation, either primary or secondary. The fish

only criteria apply to the recreation use and, thus, to all Idaho waters. In contrast, only about 23,000 miles of those streams are designated for DWS, and therefore the Water and Fish criteria apply only to a fraction of Idaho streams.

Our proposed rule is for HHC for inorganic arsenic. Arsenic is a metalloid, and exposure to arsenic can lead to increased cancer risk. Inorganic arsenic is the more toxic form, and inorganic arsenic is a CWA priority pollutant, meaning that it is among the pollutants that are regulated by the EPA and for which states are required to have water quality criteria.

Why are we revising? The short answer is that in response to a lawsuit filed by Northwest Environmental Advocates, EPA reconsidered and disapproved our previously approved criteria of 10 µg/L for both DWS and Recreation uses.

The history in a little more detail:

- In 1992, EPA promulgated federal criteria for Idaho and other states under the National Toxics Rule (0.14 and 0.018); bioaccumulation was based on lab studies of an Eastern Oyster and Bluegill
- 1995 Idaho revision based on bioaccumulation (6.2 and 0.02 µg/L)
- 1999 Idaho revision based on drinking water standard (MCL) 50µg/L
- 2010 Idaho revision based on MCL revision (10 µg/L)
- May 2016: EPA entered into a consent decree with Northwest Environmental Advocates to reconsider approval of Idaho's 2010 arsenic criteria (10 µg/L)
- September 2016: EPA reconsidered, and disapproved, Idaho's 2010 arsenic criteria
- EPA required to propose new HHC for arsenic by November 15, 2018, and either approve new Idaho criteria or promulgate federal criteria by July 15, 2019
- DEQ initiated rulemaking to update HHC for arsenic under rulemaking docket 58-0102-1801, with goal of Board adoption by November 2018
- June 2018: EPA requested modifications to consent decree:
 - November 2022 for EPA to propose
 - November 2023 for EPA to approve or promulgate

This extension provided us with more time to work on developing criteria that would be both protective and attainable, and that would be based on sound, most up-to-date science available. Currently, most states have arsenic criteria that are based on either the early EPA NTR/recommended criteria, or in many cases, such as was the case in Idaho previously, based on drinking water MCLs. In fact, many states still have CWA criteria based on the since-revised MCL of 50 µg/L. But due to court action, Idaho is first out of gate. As a result, we have seen interest in our rulemaking from both industry groups and environmental groups, and from EPA region 10 as well as EPA HQ, and from other states.

We discussed extensively the differences between how the SDWA develops MCLs, and how HHC are derived under the CWA. The SDWA allows for consideration of treatability and economics, the CWA does not. This discrepancy between the two acts and how they approach toxics criteria was the basis for the 2016 EPA disapproval. To have new criteria that were

approvable under the CWA, Idaho needed to develop criteria that were consistent with the CWA and its implementation guidance.

Early rulemaking meetings were focused on identifying what the major issues were and possible approaches to address those issues. First, there is a lack of new or updated information on arsenic toxicity or accumulation. EPA typically provides states with guidance, known as 304(a) criteria recommendations. Although EPA updated their methodology for deriving HHC in 2000 and issued new 304(a) recommendations for most HHC in 2015, recommended criteria for arsenic have not been updated since 1992. This means that not only has EPA not updated the toxicity factors, but they also have not provided any new information on bioaccumulation of arsenic since 1992.

Second, most data collected around the country are for total arsenic. However, inorganic arsenic is generally the more toxic form of arsenic and is the form for which HHC are developed. Relatively little is known about how inorganic Arsenic behaves in the environment – how fish tissue is affected by inorganic arsenic in the water column.

Further complicating this issue, In Idaho, and throughout the west, arsenic is naturally elevated in ground and surface waters, making attainment of HHC difficult or impractical, depending on the criterion value. Again, since most available data were for total arsenic, we did not know for sure what inorganic arsenic values were around the state, but we were confident that the EPA recommended criteria of 0.018 and 0.14 µg/L were well below background in most Idaho waters which would make implementation of the national recommended criteria difficult and possibly unattainable.

Early on, we spent a fair amount of time looking at using natural background provisions to ensure that we did not end up with criteria that were impractical or unattainable. However, in light of recent EPA disapproval of Washington natural background provisions, it became apparent that we would not be able to apply natural background provisions. In its disapproval of Washington natural background provisions, EPA found that the use of natural background as criteria could be considered appropriate for protecting aquatic life uses, but not for HHC.

Based on comments we received from an early discussion paper and rulemaking meetings where we discussed the issues with arsenic, we felt that the best approach was to calculate criteria using Idaho-specific inputs. When we adopted our revised HHC in 2016, we identified specific exposure factors:

- Cancer risk factor of 1×10^{-5}
- BW of 80 kg
- FI of 0.0665 kg/day
- Cancer slope factor and bioaccumulation factor (BAF) are chemical specific- we generally rely on EPA to provide the research or synthesis on current research to provide these values.

However, the EPA has not updated these for arsenic since the 1990's, and we know that the BAF was based on very limited data. As a result, In the fall of 2019, DEQ began monitoring to characterize ambient concentrations of inorganic arsenic around Idaho and to develop BAFs for Idaho fishes. In the fall of 2019, we monitored at 24 sites statewide to collect paired fish tissue and water column inorganic and total arsenic. In the summer of 2019, we began collecting monthly inorganic and total arsenic at 40 targeted sites. This was reduced to quarterly after 2020.

We also knew very little about ambient concentrations of inorganic arsenic in Idaho waters. There were some data available on total arsenic, but not inorganic arsenic. EPA's 1992 NTR criteria were based on very limited data on accumulation. Oregon identified a BAF based on total arsenic, with a translation factor to convert to inorganic arsenic. We felt that, if possible, we should collect data that were direct measures of inorganic arsenic. Working with a lab, we were able to get inorganic arsenic at detectable and quantifiable concentrations.

To our knowledge, our data set is the only one of its kind with an accumulation of inorganic arsenic from broad geographic scope (as opposed to targeted area or lab studies on total arsenic).

What is BAF? Tissue and BAFs were highly variable for both inorganic and total arsenic. The results are highly variable but based on robust data. Based on the data we collected, there is no statistically significant relationship between the concentration of inorganic arsenic in water and fish tissue.

- National BCF – 44
- Idaho's previous BAF – 1
- Oregon's BAF – 14 based on T Arsenic, apply inorganic proportion factor of 10% (so ~1.4)

In this proposed rule, we have a number of changes we have made that are not specific to arsenic criteria but are clarifications of how we apply toxics criteria, such as using the arithmetic mean annual concentration or using the dissolved fraction for metals criteria. I am not going to discuss these changes in detail but will be happy to answer any questions from the board on how or why we made certain revisions.

However, I am going to go over the specific iterations for the arsenic criteria. Our preliminary draft rule was a narrative water and fish criterion and a tissue-based fish only criterion. There was no water column value for fish only.

Fish Only: Fish muscle (fillet) tissue: 8 µg/kg on a wet-weight basis, based on an average or composite of a minimum of five (5) individual fish of the same species, where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.

Fish+Water (DWS): Human health criteria for Water and Fish exposure to inorganic arsenic are attained if fish tissue concentrations comply with the Fish Only criterion and water column concentrations meet the maximum contaminant level for inorganic arsenic provided in IDAPA 58.01.08, "Idaho Rules for Public Drinking Water Systems."

While the regulated community was largely supportive of this approach, the Idaho Conservation League and EPA were not. ICL and EPA both suggested that water column elements were needed, and EPA said in a comment letter to the preliminary draft that they *"...concluded that a fish tissue value alone will not ensure that the designated use is protected and that a water column arsenic human health criterion is needed to protect Idaho's recreational uses."*

We had internal conversations with our IPDES bureau and staff and had internal conversations about how to implement a fish tissue only criterion – costs associated with monitoring fish are significantly higher. These costs would be incurred not just by DEQ, but also by permittees with discharge permits that are required to monitor for compliance with criteria.

Therefore, based on these comments we made some significant changes to the draft rule. For Water and Fish, our basic construct was the same in both Preliminary Draft and Draft #2, but we directly referenced numeric value rather than cross referenced to other rules. This was a response to comments from EPA and others and seemed to be the best way to be clear.

Fish Only – we calculated the trophic-level weighted BAF and used that method to calculate water column value. We also added some additional implementation language to address comments and concerns from both EPA and the regulated community.

A trophic level weighted BAF takes into consideration the different accumulation rates of fishes that have different prey bases. The TL-weighted BAF was 1.87 L/kg. Why did we select the TL-weighted BAF rather than other approaches advocated by rulemaking committee? BAF uncertainty. Using the TL-weighted BAF is the approach preferred by EPA and DEQ; it is intended to reduce the uncertainty inherent in calculating BAFs. It is somewhat more conservative than a straight geometric mean of all BAF data, another approach we had discussed, or a regression based BAF. Because of the uncertainty, it makes sense to use a more conservative approach. 1.87 L/kg is about 60th percentile of inorganic arsenic BAFs that we calculated from our study.

We believe that when you have as much uncertainty as we do in this situation, being protective requires you to take a more conservative approach. We know that there is much uncertainty around the calculation of a BAF for inorganic arsenic. We have covered that the relationship between water column inorganic arsenic and tissue is highly variable and that the relationship is not statistically significant. So, to ensure that we are protective, we think it is important to be conservative.

However, because the water quality criterion might not capture the effects to fish tissue and is based on a conservative BAF, we also have a fish tissue criterion. And we have developed

criteria where the fish tissue concentration will supersede the water column concentration. Meaning that even if the water column is above 4.3 µg/L, if the fish tissue are below 8 µg/kg, the water body will still be considered to be in compliance with WQS.

In comments to Draft #2, Regulated community, represented by IACI and AIC, continued to advocate for an alternative BAF calculation using regression analysis. We chose to continue with the TL-BAF based- water column value, but in drafting the proposed rule we have also included significant detail on how the fish tissue element can be translated for CWA purposes such as developing effluent limits, TMDL targets, etc.

EPA comments to Draft #2 were generally supportive of the approach for both Water and Fish and fish only criteria, but suggest that for fish only criterion, fish tissue data only be used when steady state conditions are met, and recommended that rule language be added to address this. EPA suggested that we add an upper bound of 10 µg/L even when fish tissue meet the tissue criterion element of 8.0 µg/kg, EPA recommended that we develop additional detail in rule, that details specific procedures for translating fish tissue to a water column value that can be used for developing permit limits or water column targets. further suggested that any translation of the fish tissue criterion to a water column target for effluent limits or TMDL applications should require rulemaking to adopt SSC, otherwise the water column element of 4.3 µg/L would be applicable criterion regardless of site-specific factors (i.e., BAF).

Throughout the rulemaking, AIC as well as others have posed questions about how the rule or elements of the rule will be implemented, and have suggested that we should develop implementation guidance as a companion to the rulemaking. We agree that there are details of implementation that must be addressed. However, we do not believe it is appropriate or a good use of time and resources to begin developing implementation guidance until after rule language is settled. Guidance cannot be binding and cannot be contrary to what is in the rule. We have continued to revise the rule language in response to stakeholder input, even up to the proposed rule before the board. We continued to solicit stakeholder input on what implementation details should be binding, in rule, and what details can be best addressed through subsequent guidance.

Because the footnotes started to become unwieldy, we chose to add an additional subsection on the application of the fish tissue element and address some of the implementation considerations that we believed were appropriate to have in rule. We added language specifying how the superseding fish tissue criterion could be translated to a water column value based on site specific factors and specified that tissue samples should be representative of game fish at the site.

Again, we received numerous comments to draft #3 and subsequently revised rule language prior to releasing Draft #4. For Water and Fish, we added language to clarify that for the drinking water exposure, the criterion applies to total inorganic arsenic and that it is based on the MCL. Human health effects from drinking water are from exposure to total inorganic arsenic, not just the dissolved fraction. Therefore, the MCL is based on total recoverable inorganic arsenic, so it is important that our criteria be based on that fraction as well. Because

the Fish Only / Recreation criterion applies to all waters, including any water designated for DWS, we felt it was unnecessary to continue to include the fish tissue element in the Water and Fish criteria.

Based on EPA comments that the fish tissue element should only supersede water column element when steady state conditions are met, we added language that states that the fish tissue element supersedes only when you have sufficient tissue data (as described in 210.03.e) and when there are no new or increasing point source discharges of arsenic.

We felt this addition is necessary to ensure the criteria and implementation of the criteria are protective. Fish tissue can be used to determine whether or not a point source discharge has the potential to exceed WQS and therefore requires an effluent limit for arsenic. However, if there is an increasing flux of arsenic into a waterbody, it might not be reasonable to assume the tissue concentrations are in equilibrium with this increased flux. We feel this is a reasonable addition – if arsenic is increasing, then you must rely on the water column element until those increases reach a steady state.

We also worked on revisions to 210.03.e to address questions and concerns from stakeholders, identifying implementation details that should be explicit in rule. Clarified in romanette i that the tissue element applies to *total recoverable* inorganic arsenic. Revised romanette ii to clarify that we are interested primarily in gamefish – what people are likely to eat – when possible. We removed the size specifications based on comments from stakeholders that have found this provision difficult to meet in other applications (selenium) and specified what the time and spatial requirements are for combining multiple samples.

We added significant detail regarding the procedure and application for translating the superseding fish tissue element. We specified how site-specific tissue can be translated to a water column value and included in equation.

Importantly, we detailed that the site specific BAF used for translating the tissue value should be either a TL-weighted BAF, similar to how the water column element was derived, or using other methods provided that they are scientifically defensible. So, for example, the approach outlined by IACI using regression analysis might be defensible if site specific data show a significant relationship between water column concentrations and fish tissue concentrations. Draft #4 was the draft proposed rule that was published in the March bulletin, with formal comments submitted.

We received formal written comments from the administrative bulletin, and, once again, we have revised the proposed rule to address comments that were received. This is the proposal before the Board today. The revised proposed rule has the same numeric criteria as the draft rule, but we have made significant changes to the footnotes and 210.03.e.

In recognition of both EPA and IACI/AIC comments on the use of fish tissue data and when tissue element supersedes the water column element, we changed the language in the footnote to the Fish Only criterion. We reference ‘new activity or discharge’ which is a term

defined in WQS as: *An activity or discharge that has not been previously authorized. Existing activities or discharges not currently permitted or licensed will be presumed to be new unless the Director determines to the contrary based on review of available evidence. An activity or discharge that has previously taken place without need for a license or permit is not a new activity or discharge when first licensed or permitted.*

We believe that this revision meets the intent of EPA's comments regarding steady state, while providing specificity about when the fish tissue should be expected to reach equilibrium with increased flux into waters. The available scientific literature shows that fish are quickly able to reach equilibrium with new influx of inorganic arsenic, and therefore 90 days is sufficient time for the fish tissue to be a reliable indicator of how tissue is affected by a new discharge.

We added detail on gamefish preference. Because the criteria are intended to protect people from exposure through fish consumption, we prefer that fish that have a high likelihood of consumption should be used. However, we acknowledge that these fish are not always present, or cannot always be obtained, so we want this to be a stated preference but not a requirement. We clarified the purpose for translation of the fish tissue element – that it doesn't represent a new water column criterion, but rather is a translation of the tissue element for specific purposes.

Importantly, we also included provision to use translation for identifying targets in fishless waters. These are waters that lack the hydrology and/or habitat to support fishes, not waters where we do not have fish data.

All stakeholders have expressed support for the Water and Fish criterion. AIC and IACI have recommended that we continue to include the fish tissue element within the Water and Fish criterion, but we believe that it is duplicative and unnecessary; it does not provide any different implementation or application and does not add any additional clarity or protectiveness since all waters will already be protected by the fish only criterion.

AIC and IACI have continued to advocate for an approach that does not include a water column element as a criterion or that the element be based on regression analysis rather than the TL-weighted approach we used.

- We continue to believe that the more conservative TL-weighted approach is appropriate, especially when the relationship is not statistically significant.
- We believe a water column element is necessary to provide the basis for protection when fish tissue data are unavailable or when collection of expensive fish tissue data is not preferable
- By including the fish tissue element, and having it supersede the water column element, we provide flexibility and opportunity for the use of the more direct measure of exposure when that is preferred

EPA recommended that we provide more detailed specifics on sampling requirements for translation of fish tissue element in rule. We believe we have struck the correct balance with the level of detail in rule and intend to develop implementation guidance providing additional details such as sampling and analytical procedures. We feel that level of detail in rule could have the unintended consequence of requiring methods that may become obsolete. NPDES methods as example.

EPA recommends that we do not allow for alternative, scientifically defensible methods for calculation of site specific BAF for purposes of translation and that we specify that this would require rulemaking to adopt SSC. We disagree...

IACI and AIC suggest that we address mixing zones. We believe that the current mixing zone rule and guidance makes it clear that arsenic would not be treated in the same manner as those pollutants identified as 'bioaccumulative pollutants.'

AIC suggested that rather than effluent limits, arsenic should be controlled through pollutant minimization plans (PMP), similar to provisions that are available for mercury (Hg) and polychlorinated biphenyls (PCBs). We disagree. Unlike Hg and PCBs, Arsenic is not highly bioaccumulative. We are unaware of any documentation that demonstrates that a PMP would be effective for reducing inorganic arsenic in effluent.

EPA suggested that we revise our WQS and our uses to support a subsistence designated use in Idaho to address tribal treaty rights. We decline.

After 4 years of negotiation, we believe we have arrived at a proposed rule that is both protective and practical, that is attainable, and that is approvable. We have a Water and Fish criterion that is based on protecting the DWS use, meaning that no additional treatment is required by any system delivering surface water to customers.

We have a fish only criterion that consists of two elements: a water column element that we believe is protective of the use, and that is currently attained in surface waters around Idaho, indicating it is generally attainable. We include a water column element that can supersede the water column element in instances where it makes sense. Dischargers or the agency can develop site-specific translations to water column targets for specific purposes such as determining the need or basis of effluent limits. We include provisions to ensure that the fish tissue criterion is reflective of current conditions. We include provisions to ensure that the fish tissue translation is based on procedures that derive protective targets.

Kevin Boling asked if this research relates to the fish consumption study from a few years ago. Mr. Pappani explained that arsenic was not part of the study of toxics criteria although they used some of the same methods from the rulemaking Mr. Boling referenced. The main difference is that they did not use the national recommended bioaccumulation factor. They calculated their own. However, they did follow the same procedures identified in the previous rulemaking.

Kevin Boling asked if there will be an immediate impact to stakeholders. Dr. Mary Anne Nelson responded that it will not be immediate. Any changes would be reflected in the next permit. There are some mines and municipalities that might be impacted by the rule, but they do not know yet. The data collected suggest that changes may not be required. Mr. Boling asked a follow-up question as to whether stakeholders who may be subject to the rule have the option to do their own fish tissue testing to determine if they are in compliance. Dr. Nelson replied that yes DEQ can work with their permitted entities, and if they believe that is in their best interest, we can incorporate it into their permit. She gave an example of a municipality with arsenic monitoring requirements put into their permit. If there is a potential in the future for an effluent limit, DEQ would ask the permittee to do sampling of fish tissue data to determine if they need that effluent limit the next time their permit is up for renewal. Mr. Boling asked how many locations are asked to monitor arsenic. Dr. Nelson replied that there are 25 municipalities that are required to monitor in their wastewater permits and seven drinking water treatment facilities that are covered under a general permit.

Randy MacMillan commended the team on a good job. He asked if they know how long it takes fish to convert inorganic to organic arsenic. Mr. Pappani replied that it takes a matter of days. He noted that unlike most bioaccumulation as you go up the food chain, we see arsenic biotransformation because organisms are efficient and converting arsenic to the less toxic form and excrete it. Dr. MacMillan commented that he was not surprised to see that and noted that the 90-day testing period is enough to have confidence about what the fish contain.

Chairman Kiebert asked which geological formation the arsenic comes from for the Man Creek watershed. Mr. Pappani replied that when they first presented results, they were surprised at the level of arsenic in that watershed outside Weiser because they did not expect that much. However, they were putting resources into sampling all around the state and did not have the opportunity to investigate causes for specific sites. He noted places like the Bruneau River were not surprising due to the geothermal activity. He also noted that the South Fork Coeur D'Alene had low background and that was also surprising.

Will Tiedeman Idaho Conservation League

Mr. Tiedeman thanked DEQ for their diligence and that the rule was very data driven by data relevant to Idaho. ICL feels the rule is protective of the environment, humans, and fishes while still allowing flexibility for site specific criteria.

Johanna Bell, Association of Idaho Cities

Ms. Bell thanked DEQ and the Board for discussion on this topic. Many of the issues that directly impact AIC members have been addressed. Their members are continually investing in protecting human health and environment. AIC's goal was to make sure criteria were developed in a way that does protect human health. Some implementation issues were challenging and AIC supports the solutions arrived at in rule.

Han Shaw EPA Region 10

Ms. Shaw thanked DEQ for collaboration during the rulemaking process. EPA has been working with the state throughout the whole rulemaking and DEQ has worked to address EPA's concerns. There are a few remaining comments and concerns.

Jim Keating EPA Headquarters

Mr. Keating explained that EPA has concerns with how the rule allows for development of a site-specific BAF for fishless waters. He read the portion of the rule containing the language of concerns. EPA is concerned with the language because of the spatial variability of arsenic. They do not want people to be able to combine results from fishless water sampling and downstream fish tissue sampling. EPA is concerned it would result in lower BAF for the fishless water and less protection for the downstream water. Arsenic criteria protect human consumers of fish so they understand the focus on the downstream location in fish; however, the measurements in that downstream location should be fish tissue and the water column. He suggested modifying the rule in the following way to remove one of the references to fishless water. Dr. Mary Anne Nelson indicated the Department agreed and proposed to change the rule to read: *In fishless waters, surface water and fish tissue from the immediate downstream waters may be used for bioaccumulation modeling. In the absence of sufficient fish tissue data, the water column element is the applicable criterion element in fishless waters.*

Lisa Kusnierz with EPA Region 10 in the Idaho Office

Ms. Kusnierz explained that EPA commented on the site-specific translation component in Section 210.03.e.v numerous times throughout the rulemaking. EPA is concerned with the language that other scientifically defensible methods for deriving a protective BAF may be used. EPA understands DEQ's position that there are other methods for doing a translation, but they are concerned that there is a lack of details in the rule for EPA to be able to evaluate the method to make sure it's protective and suitable. EPA is concerned that what is scientifically defensible is up for interpretation and wants the language to be clearer. EPA also wants the implementation guidance DEQ is developing to include more details on what is considered scientifically defensible. Ms. Kusnierz said EPA also has a question about the newer language in subsection 210.03.e.iv; will translations not be done for water quality assessments and that 4.3 µg/L would be used and what happens for assessments if there is TMDL water column target that differs from 4.3 µg/L?

Mr. Pappani responded that DEQ does not think it is necessary to translate fish tissue data to a water column value for assessment purposes. If we have fish tissue data, either showing exceedance or compliance, then we have information on the superseding criteria on which to base the assessment. Regardless of the water column value, if the fish tissue is meeting criteria then the water body is meeting it and would not be listed as impaired or vice versa. For the CWA applications (effluent limits, TMDLs, and Fishless Waters), DEQ believes it is still appropriate to use scientifically defensible methods in the rule remembering that when effluent limits or TMDL targets are developed, they are subject to public comment and in many instances are subject to EPA approval and can be challenged if it is determined that what DEQ has implemented is not defensible or there is concern about the method being used. There has

been a lot of conversation about implementation difficulties, and DEQ is planning to start implementation guidance as soon as there is settled rule language. EPA knows this is complicated and there are many questions. DEQ will attempt to address the questions in the guidance, including the questions EPA raised.

Kevin Boling asked if DEQ stands behind the motion as written in light of the comments. Mary Anne Nelson replied that DEQ does have recommended language to change the motion. Paula Wilson shared new motion language.

Beth Elroy noted that the Tribes have participated in the negotiated rulemaking process and asked DEQ if they received an informal signal that they were supportive. Mr. Pappani noted that they attended many rulemaking meetings, but he does not recall any comments either written or discussion.

With no further comments, Chairman Kiebert requested a motion to adopt Water Quality Standards Docket No. 58-0102-2201.

Motion: Dr. Randy MacMillan moved that the Board of Environmental Quality adopt the final proposal as presented, with the exception of the phrase “from the fishless waters” found in the last paragraph of 210.03.e.iv.

Second: Motion was seconded by Kevin Boling

Vote: The motion carried unanimously

Director Byrne recognized DEQ staff’s effort that went into the rulemaking over the last four years. In particular, he noted that Jason Pappani has been part of the rulemakings. Jason was leaving DEQ for EPA and would be missed. Chairman Kiebert also thanked Mr. Pappani.

3. Rule Docket Status Report

Caroline Moores, Operations Senior Analyst

Mr. Chairman and members of the Board, my name is Caroline Moores, and I am here to present the rule docket status report. As you can see, we have a number of Air Quality dockets we are working through, and Water Quality dockets. Two of those are Zero-based Regulation Dockets. One of those is Air Quality and one is the Recycled Water Rules. I want to note one change to the report since the materials were prepared. 58.01.05, Rules and Standards for Hazardous Waste, is doing an annual incorporation by reference this year.

4. Contested Case Status Report

Paula Wilson, Hearing Coordinator - Ms. Wilson noted that DEQ has no contested cases to report.

5. Other Business

There were/no additional items or questions. Chairman Kiebert adjourned the May 26, 2022 meeting of the Board of Environmental Quality.