

**AGENDA**  
**Utah Water Quality Standards Workgroup**  
**May 24, 2021 1:00-3:00**  
**Remote Meeting**

[Google Meet](#)

meet.google.com/imw-gyup-mkk

(US) +1 413-453-2071 PIN: 403 548 093#

C. Bittner mobile if problems connecting 801-243-0180

<b>Subject</b>	<b>Discussion Lead</b>	<b>Details/Supporting Documents</b>
Welcome and roll call	Chris Bittner, DWQ	
DWQ standards priorities and 2020 Triennial Review	Chris Bittner, DWQ	Overview of DWQ's standards priorities for the next 3 years DWQ-2021-008532 Triennial Review.pdf
EPA 2013 Ammonia criteria recalculated	Chris Bittner, DWQ	Unionids-present criteria recalculated for Utah and proposed revisions for implementation in Utah UT NH4 Stds Wrkgrp May2021.pdf
Proposed next meeting		August 16, 2021 1:00 PM



## Meeting Summary Utah Water Quality Standards Workgroup May 24, 2021

### **Implementation of Ammonia Criteria, Chris Bittner**

The proposed updates to the implementation plan were presented. DWQ will update the 2017 implementation plan and solicit comments. The key updates will include the criteria recalculated for Utah, proposing a unionids-present as the default criteria, that DWQ not surveying all POTW receiving waters, and a revised schedule. The Utah-specific recalculated acute criteria are generally similar to the Utah's existing criteria and the chronic criteria are less stringent. The recalculated criteria shared with the group are provisional because any more recent toxicity data have not been included. Mr. Bittner requested any additional toxicity data for ammonia from the group.

Mr. Myers generally supports the proposed approach as long as a site-specific option of no-unionids is preserved. Ms. Cline asked if applying unionids-absent criteria to a water would inhibit future reintroduction efforts. Mr. Parrish noted that any site-specific standards or existing UAAs are subject to future reviews during the triennial reviews should new information become available. Mr. Myers asked about the timing of site-specific unionids absent criteria for the Jordan River with the adoption of a statewide unionids-present criteria (the WFWQC recently submitted unionid mussels absent survey results to DWQ). Mr. Bittner responded that this issue had not been considered but will be addressed in the updated of the Implementation Guidance. Mr. Myers initiated a discussion of the suitability of wetland habitats for unionid mussels if the ammonia criteria would be applied to all Class 3 waters. Mr. Miller reported that impounds in Great Salt Lake Class 3 Wildlife Management Areas are treated with rotenone which would also be toxic to mussels. The group discussed and no clear consensus was apparent. However, these wetlands can be addressed by site-specific surveys. Ms. Cline supports the protective default assumption of unionids present for statewide criteria. Mr. Richards opined that there was no evidence of unionid mussels in the Colorado River drainage, including the Virgin River. Mr. Bittner's recollection was that the USU study had identified Anodonta shells being present on the Colorado at the confluence with the Dolores River. Mr. Bittner verified the record after the meeting and also observed a record for unionids found in the Virgin River. Mr. Richards reported that based on the efforts of Torrey Rodgers and the WFWQC, eDNA surveys are currently do not appear to be reliable because of false negatives. Mr. Richards asked about the discrepancy between the implementation dates for the ammonia criteria in the response to comments versus the tracking spreadsheet. Mr. Bittner said the dates should match. However, the schedule for the ammonia criteria may change when the implementation guidance is updated.

### **DWQ Standards Priorities, Chris Bittner**

The triennial review tracking spreadsheet was reviewed.

The group discussed some of the challenges associated with dissolved oxygen criteria for higher elevations. Oxygen solubility is dependent on pressure and temperature that will vary based on season and elevation. DWQ will initially review what other Region 8 states have done. Establishing a statewide standard may be challenging because of the anticipated variability due to temperature and pressure. The issue might be best addressed by site-specific criteria.

The group discussed the EPA aluminum criteria. DWQ anticipates adding the 2018 EPA criteria to the existing criteria. The 2018 criteria would apply when DOC data are available. Mr. Myers noted that aluminum common in wastewater treatment effluent because of its use as a flocculant. During spring runoff, water hardness in e.g., the Cottonwood Canyon creeks are low and Utah's current chronic criterion could apply as opposed to the acute criterion that usually apply because of pH and hardness. Dischargers should be provided the option to collect DOC data to support the 2018 criteria. In response to a question from Ms. Cline, Ms. Hinman reported that most of the current impairments were located in the Uinta mountains. Ms. Cline thought that Boulder Mountain is another potential area for impairments because the water is soft. Mr. Parrish suggested consulting with EPA HQ to confirm that retaining Utah's existing aluminum criteria in addition to the new criteria would be approvable. Mr. Bittner noted that the EPA requires that permit limits for aluminum be based on the total recoverable but is allowing the states flexibility on the analytical methods used for assessment. Alternative analytical methods have been identified that may correlate better with the toxic effects of aluminum.

In response to a question from Ms. Kirschner, Mr. Bittner clarified that a provision authorizing compliance schedules was needed in R317-2 in addition to the existing provisions in R317-8 (Permitting). Mr. Parrish noted that the need for the provision in the standards was identified by EPA because of litigation in other states.

With regards to the numeric criteria for Great Salt Lake, Mr. Bittner clarified that the efforts were focused on the toxic and priority pollutants as opposed to nutrients.

**Next Meeting:** August 16, 2021 1:00 PM

DRAFT

## Meeting Attendance

Meeting **Water Quality Standards Workgroup**

Meeting Date: **May 25, 2021**

Chair: **C Bittner**

Place/Room: **Remote via internet**

Name	Affiliation	Attendance
Chris Bittner	DEQ/DWQ	
Ben Holcomb	DEQ/DWQ	
George Parrish	USEPA R8	
Lisa Kirschner	PBL/RTKC	
Jay Olson	Utah Dept of Food and Agriculture	
Leland Myers	WFWQC	
Joe Crawford	CUWCD	
Chris Cline	USFWS	
Brian Somers	Utah Mining Association	
Terry Price	SLC Public Utilities	
Elise Hinman	DWQ	
David Richards	Oreohelix	
Therron Miller	WFWQC	
Shelly Turnbow	Provo	
Tim Hawkes	GSLBSC	





# Implementation Update EPA (2013) Ammonia Criteria

Water Quality Standards Workgroup

May 24, 2021



UTAH DEPARTMENT of  
ENVIRONMENTAL QUALITY

**WATER  
QUALITY**



# Presentation Overview

1. Provisional recalculated criteria for Utah
2. Proposed changes to [2017 Utah Implementation Guidance](#)
3. Anticipated milestones and schedule



M. Falcata (USFWS)

The cover page of the document features the Utah Department of Environmental Quality Water Quality logo at the top left. The title is centered and reads: "Utah Implementation Guidance for the 2013 USEPA Ammonia Criteria for the Protection of Aquatic Life." Below the title, the date "September 20, 2017" and "Version 1.0" are listed. At the bottom, there is a small line of text: "The review draft of this document was titled Adoption of 2013 USEPA Ammonia Criteria for the Protection of Aquatic Life for Utah." In the bottom left corner, it says "UTAH DIVISION OF WATER QUALITY DWQ-2017-002062.Docx" and in the bottom right corner, "Version 1.0".

# Utah Provisional Recalculation with new data

## Acute tests

- *Anodonta nuttalliana* (aka, *californiensis*)
- *Margaritifera falcata*

Chronic results for *A. nuttalliana* and *M. falcata* estimated using acute-to-chronic ratio approach

Deleted 3 fish species and 10 unionid species from EPA (2013) database

- Atlantic salmon
- Sunshine bass
- White perch

Ongoing solicitation for any other new data

The image shows the cover of a report. At the top, it says 'Central Valley Clean Water Association' over a background of mussels. Below that is an aerial view of a wastewater treatment plant. The title of the report is 'Phase IIc Freshwater Mussel Collaborative Study for Wastewater Treatment Plants: Ammonia Criteria Recalculation Final Report'. It is prepared for the Central Valley Clean Water Association and prepared by Pacific Ecorisk. It is in association with Robertson-Bryan, Inc. and Larry Walker Associates. The date is January 2020. There are also three smaller images: a river with green banks, a close-up of a mussel, and a person in a boat on a river.

Central Valley Clean Water Association

Phase IIc Freshwater Mussel Collaborative Study for Wastewater Treatment Plants:  
Ammonia Criteria Recalculation  
Final Report

Prepared for:  
Central Valley Clean Water Association

Prepared by:  
PACIFIC ECORISK  
ENVIRONMENTAL CONSULTING & TESTING

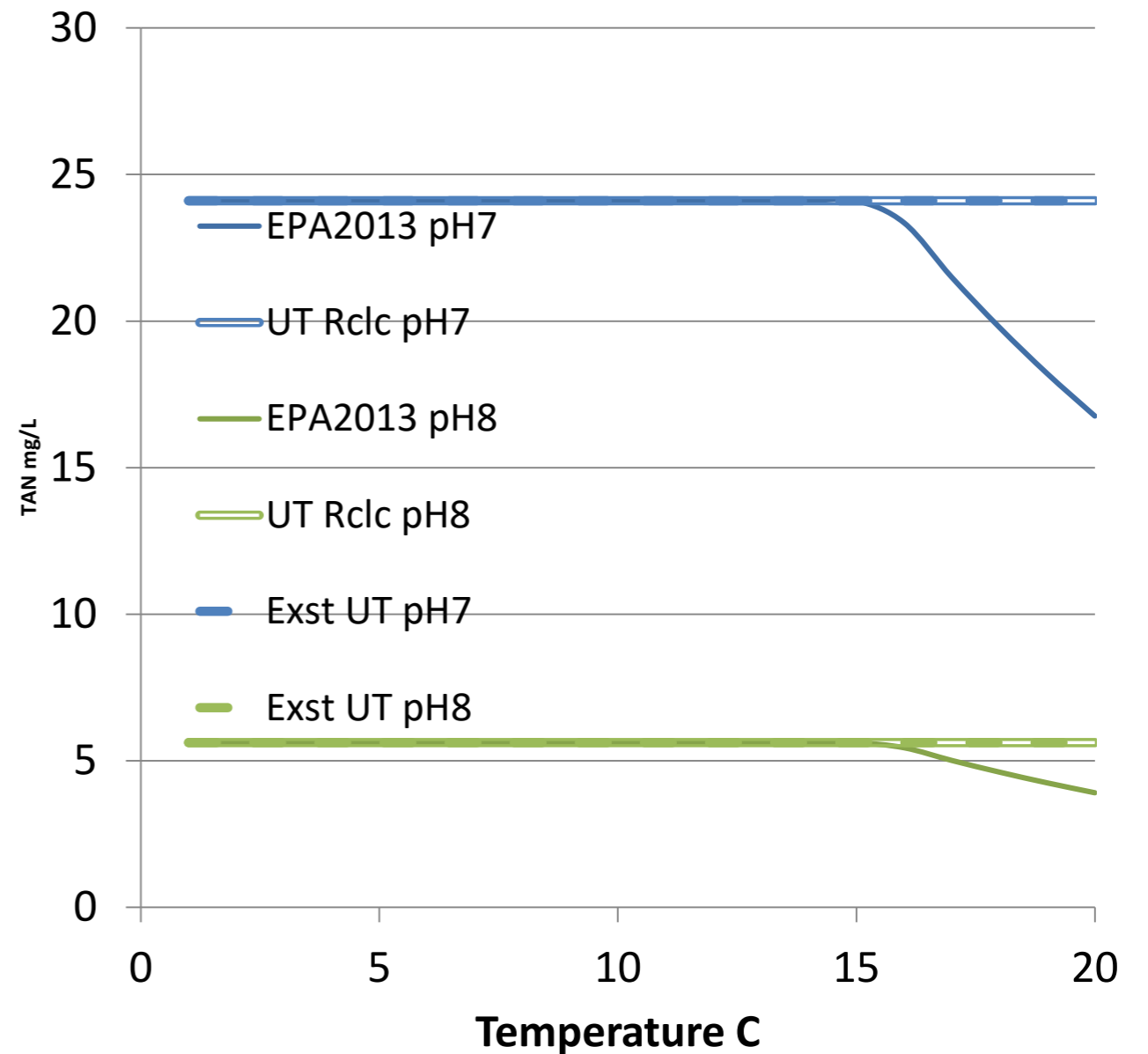
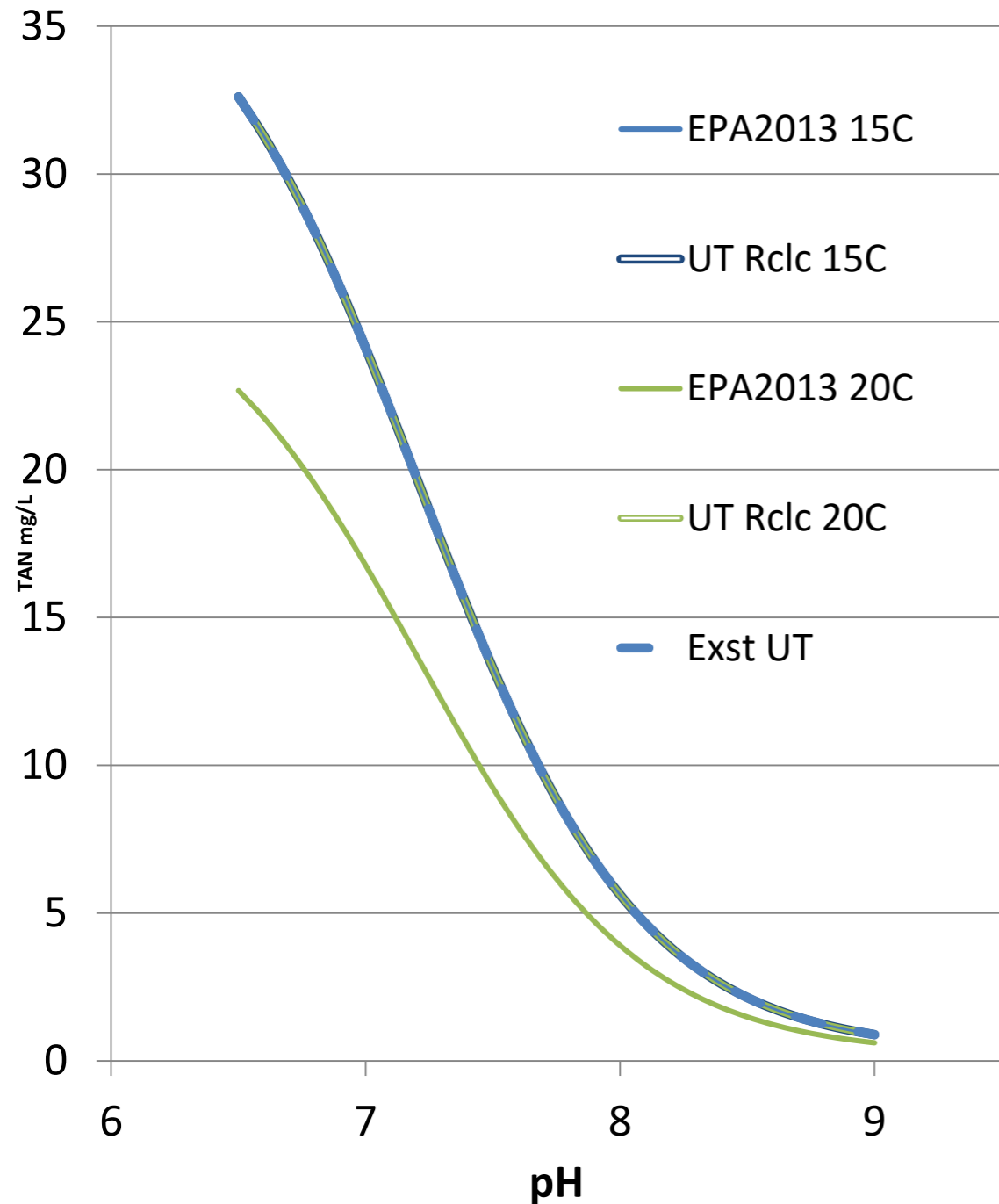
In association with:  
ROBERTSON - BRYAN, INC.  
Solutions for Progress

LARRY WALKER  
ASSOCIATES

January 2020

# Acute: Unionids and Oncorhynchus Residents

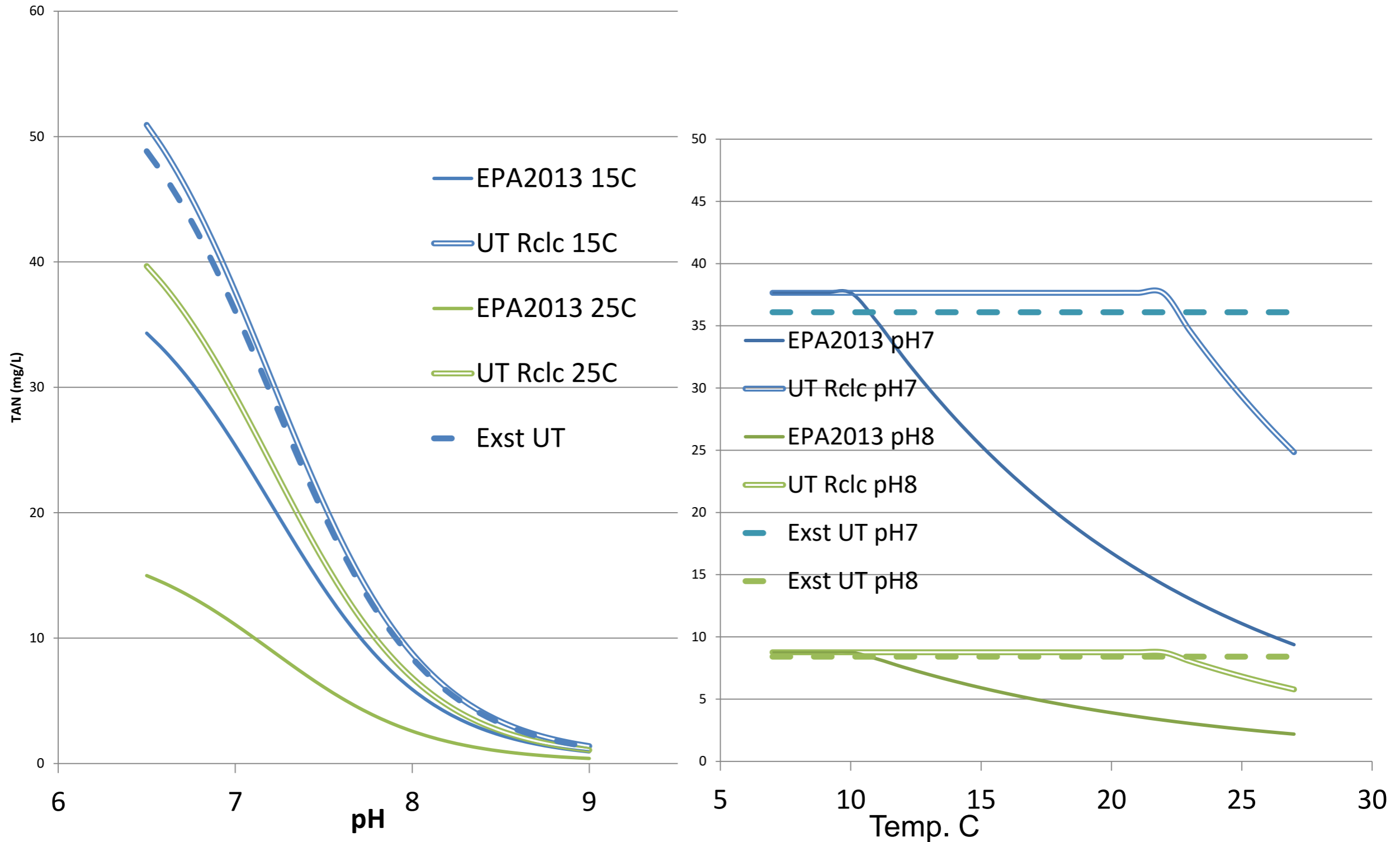
*Provisional*





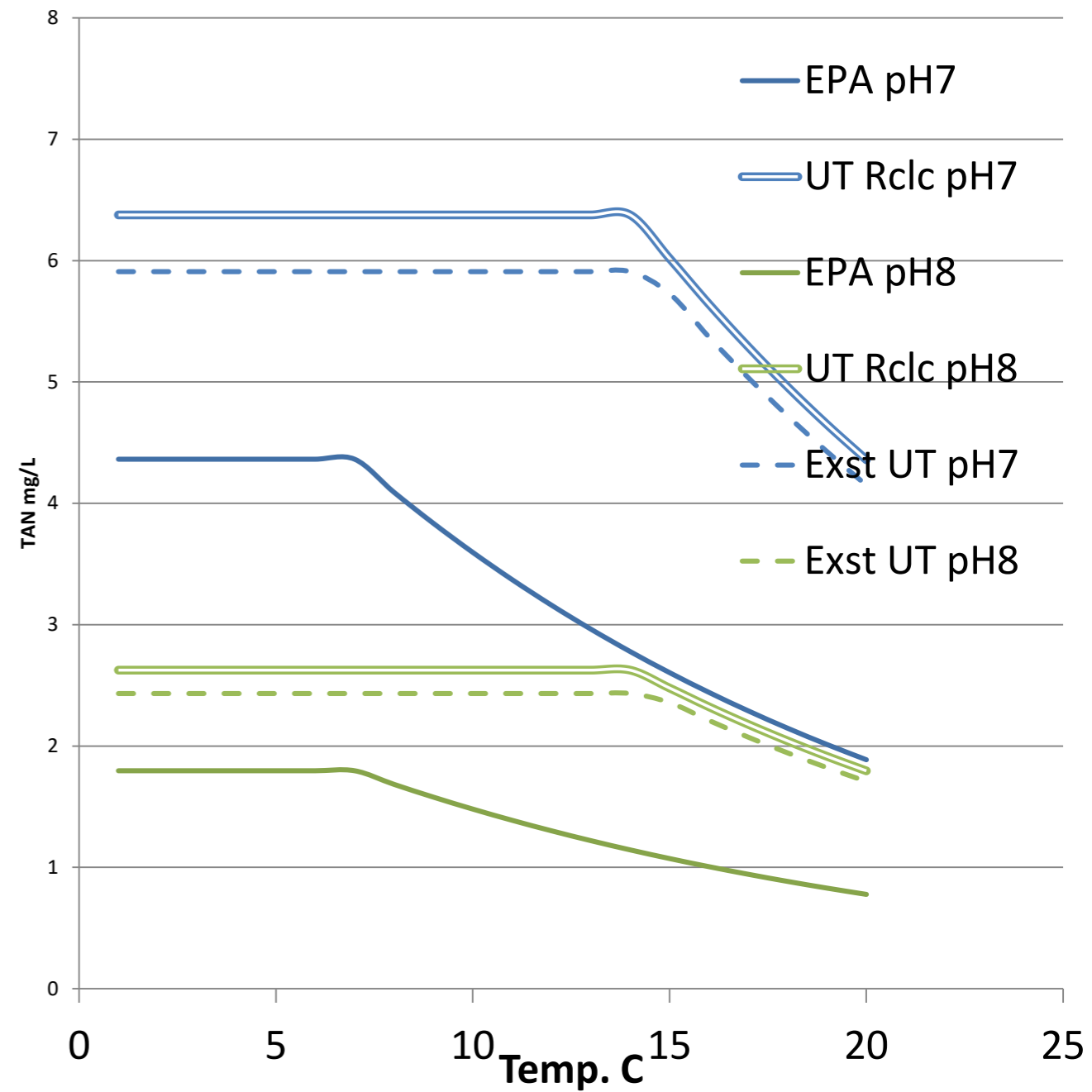
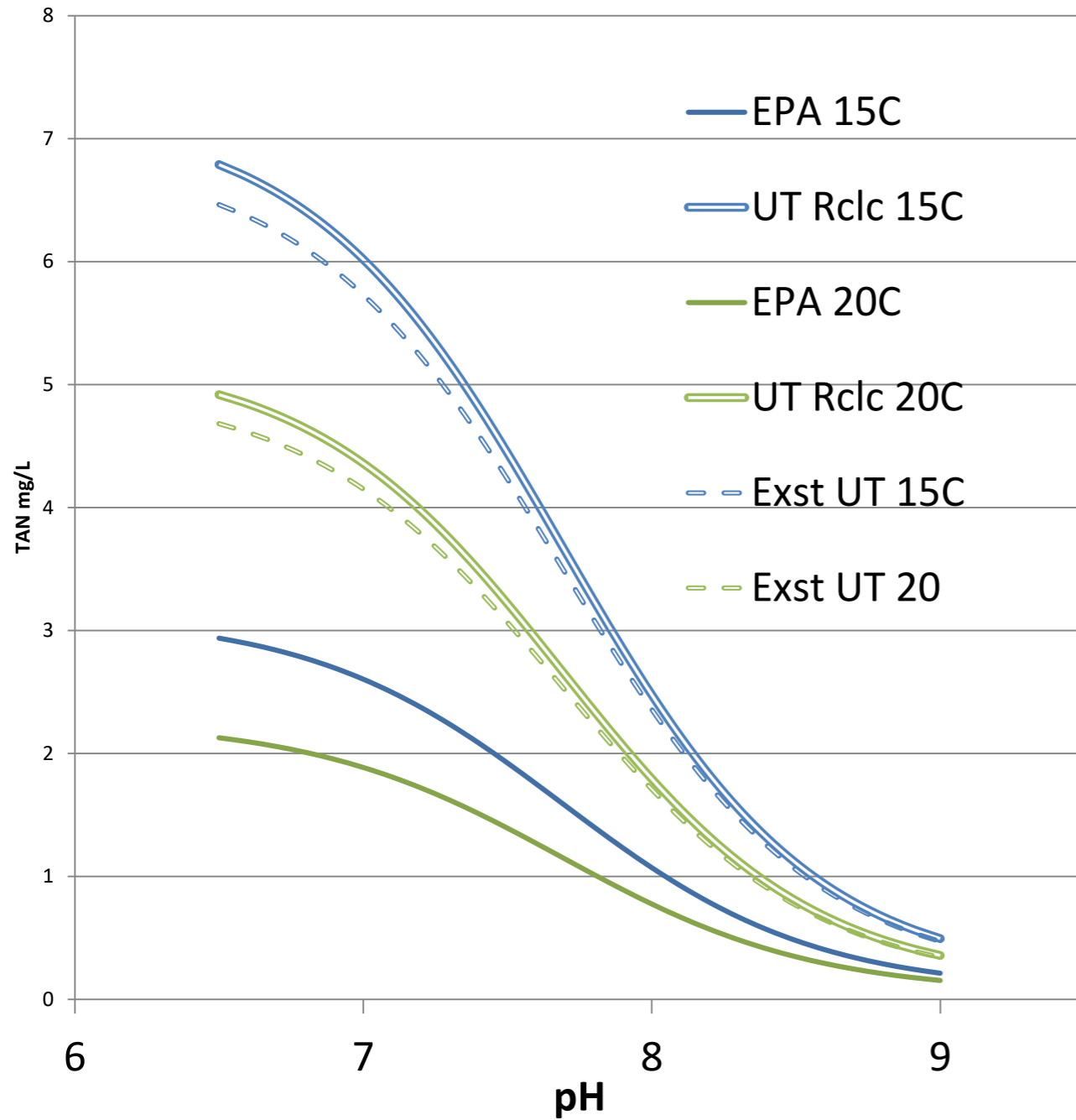
# Acute: Unionids Residents, no *Oncorhynchus*

Provisional



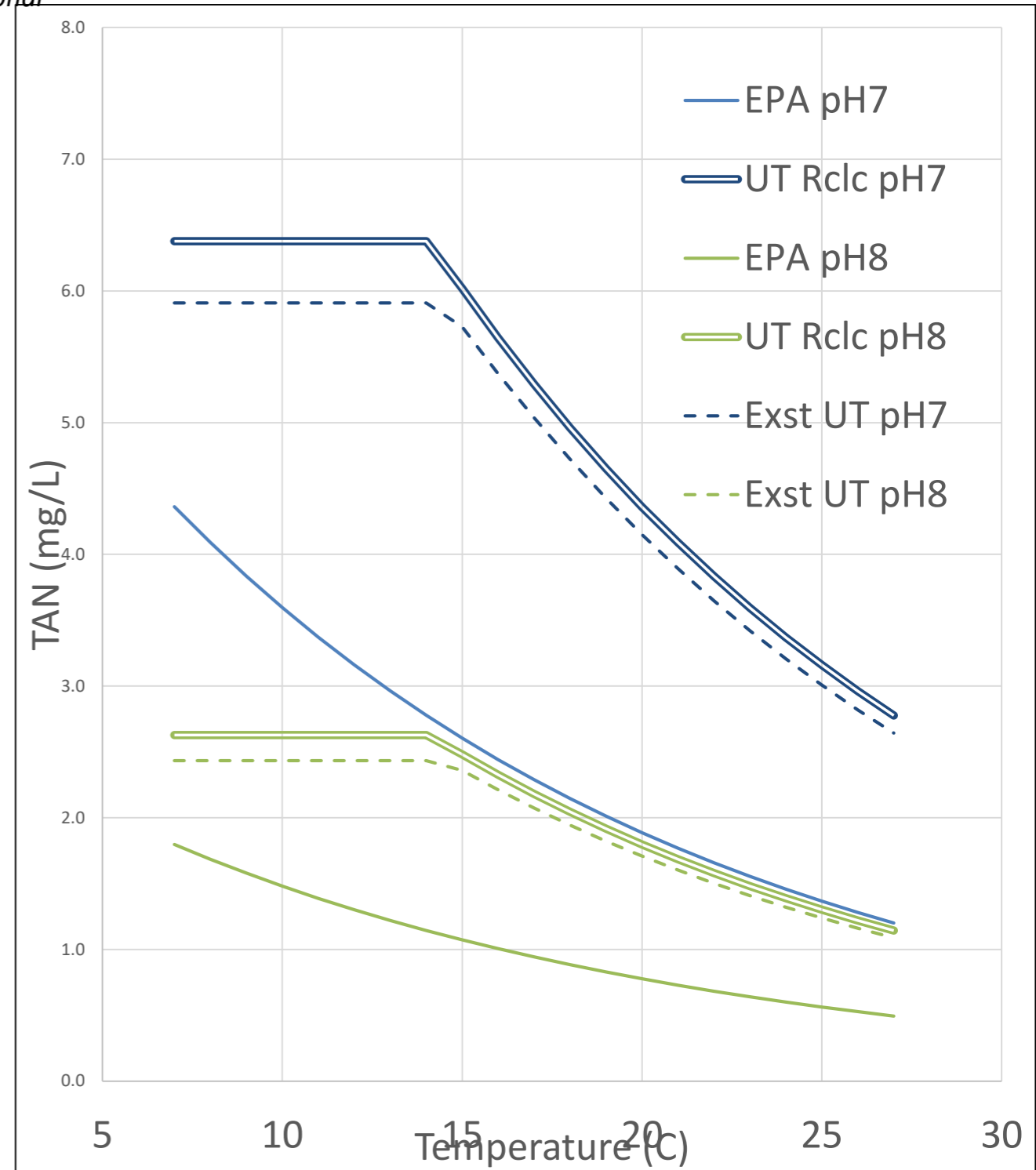
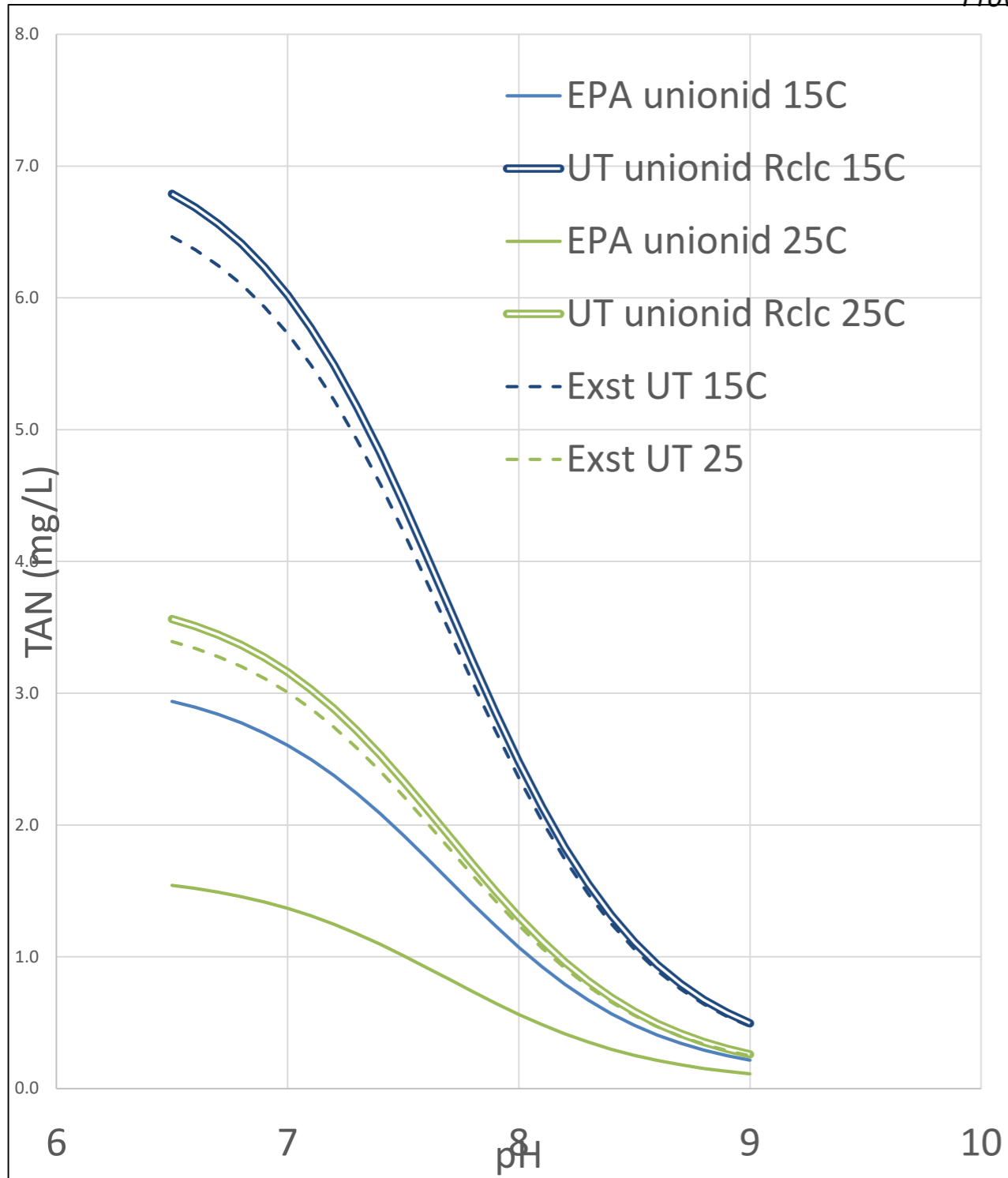
# Chronic: Unionids and Oncorhynchus Residents

Provisional



# Chronic: Unionids Residents, no *Oncorhynchus*

Provisional



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# *Oncorhynchus* does not affect recalculated chronic criteria

Recalculated unionids and *Oncorhynchus* present

$$CCC = 0.9569 \times \left( \frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}} \right) \times \text{MIN}(6.663, 3.945 \times 10^{0.028 \times (20-T)})$$

Recalculated unionids present and no *Oncorhynchus*

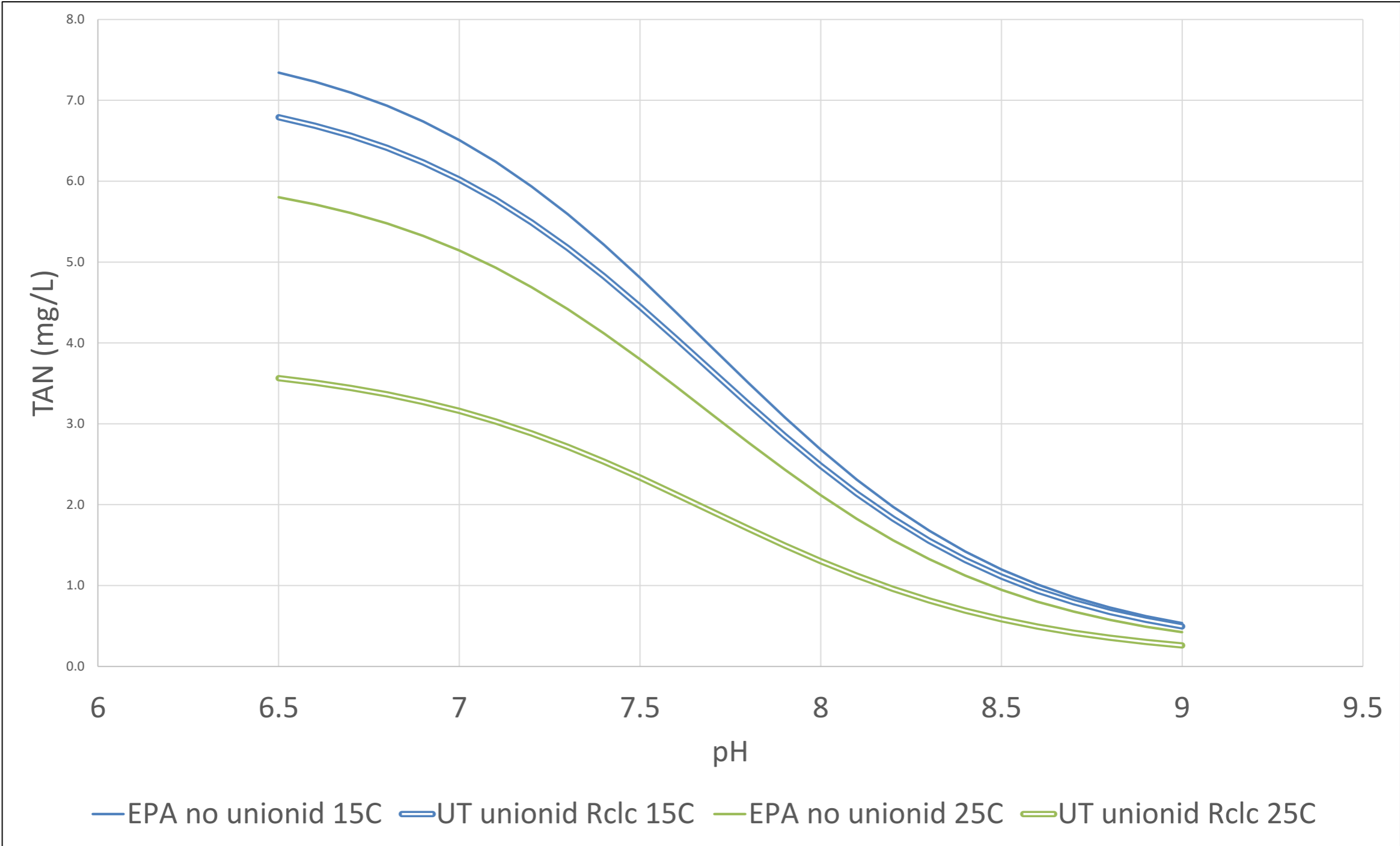
$$CCC = 0.9569 \times \left( \frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}} \right) \times \text{MIN}(6.920, 3.945 \times 10^{0.028 \times (20-T)})$$

At two significant figures, equations result in identical criteria



# Chronic: Criteria recalculated for Unionids vs no Unionids

*Provisional*



# Implementation Guidance Updates

Update references for historical and recent occurrence records for unionids

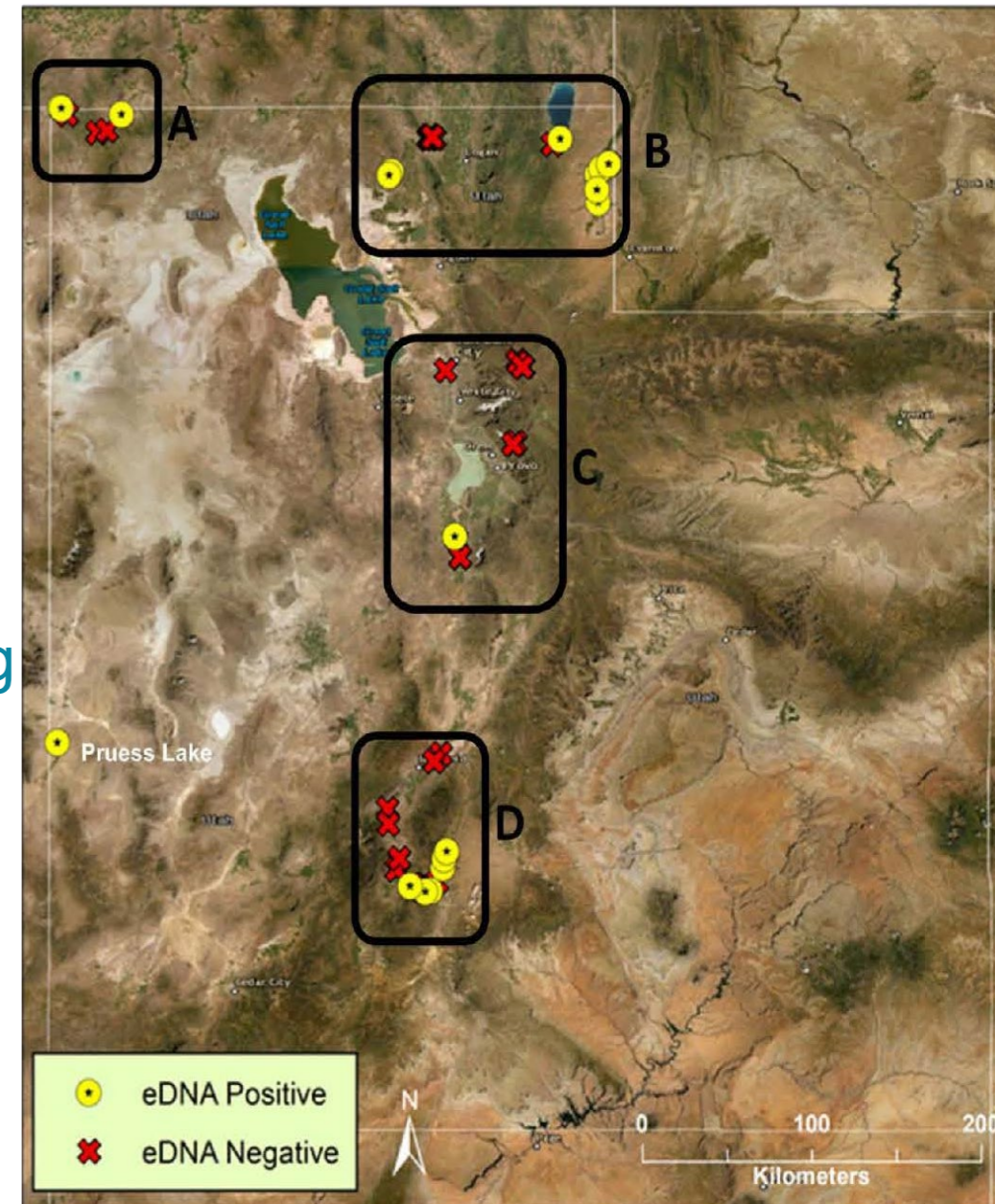
Include references for eDNA for Utah species

Add the recalculated criteria for Utah

DWQ no longer proposing to survey POTW receiving waters

- Unionids-present as a statewide default
- Recalculated criteria will result in little change
- Resource limitations

Continued DWQ support for site-specific criteria



Unionid mussels (Rodgers, 2020)

# Anticipated Schedule

<b>Activity</b>	<b>Duration</b>	<b>Date</b>
Review any newer toxicity data (new data may change the recalculated criteria)	30 days	June 2021
Update 2017 Implementation Guidance	3 months	August 2021
Notification to permittees and public comment period	30 days	September 2021
Respond to comments and revise Implementation Guidance	60 days	November 2021
Final workgroup review	30 days	December 2021
Propose revised criteria to Water Quality Board		January 2022

**Thank you**





UTAH DEPARTMENT *of*  
ENVIRONMENTAL QUALITY  
**WATER  
QUALITY**

**RESPONSIVENESS SUMMARY**  
**2020 Water Quality Standards Triennial Review**  
**April 15, 2021**

- I. Public Notice
- II. Comments and Division of Water Quality Responses
- III. Comments-as received
- IV. Updated Standards Tracking Worksheets



State of Utah

GARY R. HERBERT  
*Governor*

SPENCER J. COX  
*Lieutenant Governor*

Department of  
Environmental Quality

L. Scott Baird  
*Executive Director*

DIVISION OF WATER QUALITY  
Erica Brown Gaddis, PhD  
*Director*

September 15, 2020

DIVISION OF WATER QUALITY  
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY  
PUBLIC NOTICE OF 2020 Water Quality  
Standards Triennial Review

**PURPOSE OF PUBLIC NOTICE**

The purpose of this public notice is to declare a public comment period to solicit public and other stakeholder comments on water quality standards revisions to be considered during the 2020 water quality standards triennial review.

**BACKGROUND**

To meet our obligations under the Clean Water Act, the Division of Water Quality is required to review Utah's Water Quality Standards in [Utah Administrative Code R317-2](#) at least once every three years. As part of this review DWQ is soliciting input from the public and interested parties regarding standards topics to be considered during the review including any specific changes to Utah's Standards of Quality for Water of the State. When appropriate, the rationale and any supporting information should be included with the recommendations.

The Division of Water Quality will discuss the comments with the Usha Water Quality Standards Workgroup, inform the Utah Water Quality Board at a regularly scheduled meeting, and then issue comment responses. More information, including a list of revisions currently being considered is available at <https://deq.utah.gov/water-quality/triennial-review-water-quality>

**PUBLIC COMMENTS**

Public comments are invited any time prior to the deadline, the close of business on October 30, 2020. A public hearing will convene on Wednesday, October 21, 2020, 6:00-7:00 PM to accept comments. In accordance with federal and state directives regarding COVID-19, the hearing will be virtual and can be accessed at <https://utdeq.adobeconnect.com/publichearing/>. Written comments can be submitted to: Utah Division of Water Quality, Attn: Chris Bittner, P.O. Box 144870, Salt Lake City, Utah 84114-4870 or by email at: [cbittner@utah.gov](mailto:cbittner@utah.gov).

DWQ-2020-015554

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Mailing Address: P.O. Box 144810 • Salt Lake City, UT 84114-4810  
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[www.deq.utah.gov](http://www.deq.utah.gov)  
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## II. Comments and Division of Water Quality (DWQ) Responses

1. [Comment: Utah should consider adopting “hold public hearings” language into the existing R317-2-1.C.](#)

Response: Consistent with federal and state requirements, DWQ convened a public hearing for the 2020 Triennial Review. In addition, DWQ also accepts and considers recommendations for modifying or adopting new standards outside of the Triennial Review process. DWQ reviewed the public hearing requirements in 40 C.F.R. § 131.20(a) and concluded that no changes are necessary because R317-2-1.C. is consistent with these requirements as noted in the following (emphasis added):

“The water quality standards shall be reviewed and updated, if necessary, at least once every three years. The Director will seek input through a cooperative process from stakeholders representing state and federal agencies, various interest groups, and the public to develop a preliminary draft of changes. Proposed changes will be presented to the Water Quality Board for information. Informal public meetings may be held to present preliminary proposed changes to the public for comments and suggestions. Final proposed changes will be presented to the Water Quality Board for approval and authorization to initiate formal rulemaking. Public hearings will be held to solicit formal comments from the public. The Director will incorporate appropriate changes and return to the Water Quality Board to petition for formal adoption of the proposed changes following the requirements of the Utah Rulemaking Act, Title 63G, Chapter 3.”

2. [Comment: Utah should adopt the requirement that an explanation be provided if Utah is not adopting new or revised criteria for which EPA has published new or updated Clean Water Act \(CWA\) section 304\(a\) criteria.](#)

Response: DWQ has and will continue to meet this federal requirement. Adding this requirement to Utah’s water quality standards is unnecessary because the requirement exclusively affects DWQ.

3. [Comment: Utah should adopt a provision in the standards to authorize compliance schedules.](#)

Response: DWQ agrees and anticipates recommending an authorizing provision to the Water Quality Board during this Triennial Review cycle.

4. [Comment: Utah should review EPA’s CWA Section 304\(a\) 2013 updated criteria for ammonia and revise Utah’s existing criteria if appropriate.](#)

Response: DWQ agrees and continues to make progress implementing EPA’s 2013 recommendations. In 2017, DWQ published the [Utah Implementation Guidance for the 2013 USEPA Ammonia Criteria for the Protection of Aquatic Life](#) that includes a schedule for adoption. In 2019, the Water Quality Board adopted site-specific ammonia criteria for a segment of the Jordan River based on the EPA’s 2013 recommendations. DWQ has reviewed recent toxicity data relevant to Utah unionid mussel species and is recalculating the unionids-present criteria. DWQ anticipates updating the implementation guidance in 2021 and recommending updated ammonia criteria to the Water Quality Board by 2024.

5. [Comment: Utah should review EPA’s CWA Section 304\(a\) 2018 updated criteria for aluminum and revise Utah’s existing criteria if appropriate.](#)

Response: The 2018 criteria require measurements of dissolved organic carbon and DWQ does not routinely monitor for dissolved organic carbon. DWQ is evaluating including dissolved organic carbon as a routine monitoring parameter. The additional costs of these analyses have to be considered in the context of a limited monitoring budget.

Aluminum effluent concentrations in permitted discharges don’t currently demonstrate reasonable potential and also would be unlikely to demonstrate reasonable potential under the 2018 criteria. Some

## II. Comments and Division of Water Quality (DWQ) Responses

Utah waters are designated as impaired under the existing criteria and these impairments may be resolved by adopting and reassessing using the 2018 criteria.

Assuming minimal impacts to DWQ's permitting and assessment programs, DWQ anticipates proposing criteria based on the EPA 2018 criteria to supplement the existing aluminum criteria during this Triennial Review cycle. When representative dissolved organic carbon data are available, the updated criteria will supersede Utah's existing criteria. When representative dissolved organic carbon data are not available, Utah's existing criteria will continue to apply.

6. **Comment:** The EPA continues to recommend that Utah review its existing iron criterion for consistency with EPA's CWA § 304(a) criteria recommendations. Utah's aquatic life criterion for iron is currently expressed as dissolved when EPA's recommendation is 1,000 µg/L total recoverable iron. It is important to express the criterion as total recoverable given the toxicity of iron hydroxide and ferric oxide (iron precipitates or floc) to benthic organisms and the reduction of suitable spawning habitat due to excessive iron floc. We are not aware of any data or analyses to support that 1,000 µg/L as dissolved iron is protective of aquatic life. Therefore, we suggest that Utah revise the existing iron criterion to total recoverable to account for the toxicity that results from precipitated iron.

Response: DWQ committed to reviewing the iron criteria for the 2017 Triennial Review. EPA's most recent iron criteria recommendations are based on the 1986 "[Gold Book](#)". EPA recommendations for implementing the iron criteria as total recoverable are unclear as contrasted with e.g., arsenic and lead that are explicitly recommended as total recoverable. EPA's 1986 analyses focus on both the ferrous (usually soluble) and ferric (practically insoluble) forms:

"The ferrous, or bivalent (Fe<sup>++</sup>) and the ferric, or trivalent (Fe<sup>+++</sup>) irons, are the primary forms of concern in the aquatic environment, although other forms may be in organic and inorganic wastewater streams. The ferrous {Fe<sup>++</sup>} form can persist in waters void of dissolved oxygen and originates usually from groundwaters or mines when these are pumped or drained. For practical purposes the ferric (Fe<sup>+++</sup>) form is insoluble. "

DWQ is aware that precipitated iron can adversely affect aquatic life, especially benthic organisms. However, DWQ concludes that the existing programs along with the existing iron criteria are protective of aquatic life. Significant effort and research would be required to update Utah's iron criteria and no clear need has been identified to warrant these efforts.

Utah is obligated to protect the uses for iron but numeric criteria are optional (CWA Section 303(c)(2)(B) and 40 CFR § 131.11). Based on the currently available information, Utah's current criteria and implementation procedures are protective of the aquatic life uses. Permit effluent limits are based on 1,000 µg/L total recoverable iron because no dissolved-to-total recoverable concentrations translator is specified.

Utah also routinely assesses water quality using benthic macroinvertebrates. Benthic macroinvertebrates are expected to be sensitive to any adverse effects from iron flocculation. Locations where the existing criteria aren't sufficiently protective would be identified by the biological assessments and addressed through the total maximum daily load program.

7. **Comment:** Utah should review EPA's CWA Section 304(a) 2016 updated criteria for selenium and revise Utah's existing criteria if appropriate.

Response: DWQ continues to make progress with reviewing EPA's 2016 recommendations for selenium criteria. This progress includes:

- Compiling the existing data for Utah fish tissue selenium concentrations;
- Reviewing Utah's existing water concentration data including the limitations of the analytical methods;
- Compiling a list of Utah fish species;



## II. Comments and Division of Water Quality (DWQ) Responses

- Developing a list of Utah fish species recommended for tissue monitoring;
- Developing options for fishless waters;
- Reviewing and commenting on the draft EPA implementation guidance;
- Reviewing the California performance-based selenium standards;
- Identifying potential implementation issues with UPDES permits; and,
- Review of Idaho recalculated selenium criteria for potential application to Utah.

DWQ anticipates compiling this information in an implementation guidance within the next 3 years. The guidance will include a schedule for adoption and specific milestones. An important component of the guidance is requirements for developing site-specific translators to support the adoption of performance-based criteria.

8. [Comment: Utah should review EPA's CWA Section 304\(a\) 2001 criteria for methylmercury and revise Utah's water quality standards as appropriate.](#)

Response: DWQ continues to monitor mercury concentrations in fish and consumption advisories are issued when concentrations exceed the EPA methylmercury criterion of 0.3 mg/kg. Utah's mercury water criterion is 0.012 µg/L and is based on preventing mercury from accumulating in fish to concentrations unsafe for humans. While Utah's existing standards and implementation procedures are protective of the designated uses, the fish-tissue methylmercury criterion will be recommended for adoption during this Triennial Review cycle to ensure consistency with federal requirements.

9. [Comment: Utah should review EPA's CWA Section 304\(a\) 2019 recreational criteria for microcystin and cylindrospermopsin and revise Utah's water quality standards as appropriate.](#)

Response: DWQ has used similar concentrations of microcystin and cylindrospermopsin for assessing water quality under the Narrative Standards and recommending health advisories. DWQ is currently updating Utah's hazardous algal bloom program. As part of this update, DWQ will determine how and when the 2019 criteria will be adopted.

10. [Comment: For a pollutant for which the EPA has not published a recommended CWA § 304\(a\) criterion for "water + organisms" and for which the EPA has promulgated a Maximum Contaminant Level Goal \(MCLG\), the EPA generally recommends the MCLG for noncarcinogenic pollutants, or a criterion derived by recalculating the MCLG at an acceptable cancer risk level. The EPA does not recommend that the MCL be used where consideration of available treatment technology, costs, or availability of analytical methodologies has resulted in a MCL that is less protective than a MCLG. The EPA recommends that UDWQ review the criteria in Table 2.14.6 that are based on a MCL to ensure consistency with the recommendations above.](#)

Response: Utah recently expended a significant amount of effort updating over 100 human health criteria in accordance with the EPA 2015 updates. These criteria are assigned to protect the Class 1C use. The Class 1C use, protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water (UAC R317-2-6), is a Utah-specific use. The EPA CWA Section 304(a) criteria human health criteria are clearly protective of the Class 1C use because they assume direct human consumption of the water and also include consumption of fish. The criteria listed for the Class 1C use in Table 2.14.1 of UAC R317-2-14 are in some cases based on the Safe Drinking Water Act maximum contaminant levels (MCLs). The MCLs are also clearly protective of the Class 1C use because under the Safe Drinking Water Act, MCLs are at the point of consumption whereas DWQ applies these criteria to Utah surface waters prior to any treatment. DWQ continues to coordinate with the Utah Division of Drinking Water to ensure that Utah's Class 1C surface waters are protected. As resources permit, DWQ will work with EPA to address specific human health criteria that don't meet federal requirements.

11. [Comment: EPA recommends that Utah prioritize making the necessary final steps to draft and adopt water quality standards protective of its wetlands ecosystems.](#)

## II. Comments and Division of Water Quality (DWQ) Responses

Response: As noted by the comment, DWQ made significant progress with developing wetland mapping tools, sampling standard operating procedures (SOPs) specific to Utah's wetland types, assessment tools, and characterization of the highest attainable condition for impounded wetlands. However, near future progress to promulgate wetlands standards will be inhibited by the loss of EPA Wetlands Program Development Grant. DWQ is evaluating how this loss will affect the wetlands program long term. In the interim, DWQ will continue to work on protecting wetlands in coordination with the Utah Division of Natural Resources.

12. Comment: EPA recommends continued dedicated efforts to develop water quality criteria applicable to portions of GSL. We recommend that Utah continue this work so that in the near future the existing uses in GSL can be fully protected under 40 C.F.R. § 131.10(i) and 131.11.

Response: DWQ appreciates EPA's continued technical support for these efforts. By the next Triennial Review, DWQ anticipates compiling the newly developed information in an update to the 2014 Great Salt Lake Water Quality Strategy for deriving criteria. An update to the Strategy provides a forum for stakeholders, including EPA, to support and participate with these efforts.

### III. Comments-as Received



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

1595 Wynkoop Street  
DENVER, CO 80202-1129  
Phone 800-227-8917  
<http://www.epa.gov/region08>

October 30, 2020

Ref: 8WD-CWQ

Christopher Bittner  
Utah Division of Water Quality  
195 North 1950 West  
P.O. Box 144870  
Salt Lake City, Utah 84114-4870

Re: EPA 2020 Priorities for Utah's Triennial Review of Water Quality Standards

Dear Mr. Bittner:

Thank you for notifying the U.S. Environmental Protection Agency (EPA) Region 8 Water Quality Unit of the State of Utah's upcoming triennial review of its water quality standards (WQS). This letter provides the EPA's comments in response to the Utah Division of Water Quality's (UDWQ) public notice requesting scoping-level comments for the WQS triennial review<sup>1</sup> of Utah Administrative Code R317-2, *Standards of Quality for Waters of the State*. Our comments address the information and supporting materials included in the public notice and currently posted on the UDWQ website.<sup>2</sup> It is EPA's understanding that UDWQ will discuss all comments received with the Utah Water Quality Standards Workgroup (Workgroup) before updating the Utah Water Quality Board (Board) with proposed WQS revisions for the triennial review.

In August 2015 the EPA revised the WQS Regulation, 40 C.F.R. Part 131,<sup>3</sup> with important changes in the final rule including: (1) triennial reviews of state and tribal WQS, (2) provisions authorizing the use of schedules of compliance for water quality-based effluent limits (WQBELs) in National Pollutant Discharge Elimination System (NPDES) permits, (3) WQS variances, (4) designated uses for water bodies, (5) antidegradation requirements, and (6) the EPA Administrator's determinations that new or revised water quality standards are necessary. The revised regulation became effective on October 20, 2015. The 2018 Utah WQS triennial revisions adopted by the Board included:

- R317-2-3.5.e. – adding a requirement to provide for public notice and comment whenever changes are proposed to the Antidegradation Implementation Guidance; and
- R317-2-11 – extending the public notice and comment opportunities for revisions to WQS.

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<sup>1</sup> See DIVISION OF WATER QUALITY, UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY, PUBLIC NOTICE OF 2020 Water Quality Standards Triennial Review, September 15, 2020, and supporting materials.

<sup>2</sup> <https://deq.utah.gov/water-quality/triennial-review-water-quality>.

<sup>3</sup> See 80 Fed. Reg. 51020 (August 21, 2015). This federal register notice and supplemental materials are available at <http://www.epa.gov/wqs-tech/final-rulemaking-update-national-water-quality-standards-regulation>.

### III. Comments-as Received

Also, UDWQ now publishes solicitations for comments, and holds public hearings that allow for public input, on all applicable WQS during triennial reviews of R317-2, *Standards of Quality for Waters of the State* pursuant to 40 C.F.R. §§ 131.10 - 131.15. Additionally, the revised WQS Regulation requires states and authorized tribes to provide an explanation if the state is not adopting new or revised criteria for parameters for which the EPA has published new or updated Clean Water Act (CWA) § 304(a) criteria recommendations (40 CFR § 131.20(a)). For Utah's 2018 triennial review, UDWQ's public notice provided explanations where new or revised criteria were not adopted for parameters where the EPA had published new or updated CWA § 304(a) criteria recommendations since May 30, 2000.

The EPA acknowledges UDWQ's and the Board's significant work already revising Utah's WQS and standard operating procedures to meet the majority of the 2015 WQS Regulation revisions. Our comments below are designed to identify opportunities for UDWQ and the Board to further align Utah's WQS with the revised EPA WQS Regulation and make other program improvements.

#### **Triennial Reviews**

##### *Public Hearings*

Pursuant to CWA § 303(c), the EPA's revised WQS Regulation continues to require that states "shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards" (40 C.F.R. § 131.20(a)) [emphasis added]. We recommend Utah consider adopting "hold public hearings" language into the existing R317-2-1.C. Triennial Review section to be more closely aligned with 40 C.F.R. § 131.20(a). The EPA recommends UDWQ also review state law for any other conflicts with the requirements of 40 C.F.R. § 131.20 and 40 C.F.R. Part 25 and ensure the opportunities for public participation for the triennial review and other WQS changes are consistent with the requirements of the revised WQS Regulation.

##### *New or Updated Section 304(a) Criteria Recommendations*

As noted above, one of the updates to the EPA's WQS Regulation requires states and authorized tribes to provide an explanation if the state is not adopting new or revised criteria for parameters for which the EPA has published new or updated CWA section 304(a) criteria recommendations (40 CFR § 131.20(a)). This change was made to foster meaningful and transparent involvement of the public and intergovernmental coordination with local, state, federal, and tribal entities in light of recent science provided by EPA through its criteria recommendations. The EPA will not approve or disapprove this explanation. We acknowledge Utah's adoption of this practice in its recent public notices for WQS triennial reviews. However, the EPA recommends UDWQ and the Board consider adopting this new requirement in R317-2-1.C. Additionally, we recommend that the Board consider adopting those new or updated CWA § 304(a) criteria recommendations, which are discussed below.

#### **Compliance Schedule Authorizing Provision**

The 2015 revisions to EPA's WQS Regulation require that if a state intends to authorize the use of compliance schedules for WQBELs in NPDES permits, the state must adopt a permit compliance schedule authorizing provision and submit it to the EPA for review and action under CWA § 303(c) (40 C.F.R. § 131.15). We note that R317-2 does not currently include a compliance schedule authorizing



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provision. Therefore, the EPA recommends that Utah work with EPA to develop and propose such an authorizing provision in R317-2 as part of the upcoming triennial review.

#### **Water Quality Criteria**

The WQU conducted a review of R317-2-14 and identified the following criteria with new or updated EPA CWA § 304(a) water quality criteria recommendations. The WQU suggests that the Division review EPA's national recommendations while developing the state's proposal to identify any new or updated criteria that have been published since our review.<sup>4</sup>

#### *Aquatic Life Criteria*

**Ammonia** – The WQU continues to recommend that Utah update its existing ammonia criteria by considering EPA's 2013 updated ammonia criteria recommendations. It is our understanding that a survey to evaluate the historic and expected occurrence of freshwater mussels and sensitive snails in state waterbodies will be completed soon. Information obtained from this study will facilitate future revisions to Utah's ammonia criteria and the implementation of those revisions. We expect that Utah will discuss the results of this study with the WQS Workgroup prior to proposing revisions to the existing ammonia criteria. The EPA is available to provide additional technical support to aid in the adoption and implementation of the 2013 ammonia criteria recommendations.

**Aluminum** – The EPA recommends UDWQ and the Board consider updating Utah's existing aluminum criteria with EPA's 2018 revised aluminum criteria recommendations. Elevated levels of aluminum can affect some species' ability to regulate ions, like salts, and inhibit respiratory functions, like breathing. Aluminum can accumulate on the surface of a fish's gill, leading to respiratory dysfunction, and possibly death. Studies have shown that three water chemistry parameters – pH, total hardness, and dissolved organic carbon – can affect the toxicity of aluminum by affecting the bioavailability of aluminum in the water to aquatic species. We recommend UDWQ consider including dissolved organic carbon in its routine surface water sampling to facilitate future use of the EPA's recommended aluminum criteria.<sup>5</sup> Once sufficient baseline dissolved organic carbon data is available, we recommend the Board consider adopting the new aluminum criteria recommendation as a more scientifically defensible protection of aquatic life.

**Iron** - The EPA continues to recommend that Utah review its existing iron criterion for consistency with EPA's CWA § 304(a) criteria recommendations. Utah's aquatic life criterion for iron is currently expressed as dissolved when EPA's recommendation is 1,000 µg/L total recoverable iron. It is important to express the criterion as total recoverable given the toxicity of iron hydroxide and ferric oxide (iron precipitates or floc) to benthic organisms and the reduction of suitable spawning habitat due to excessive iron floc.<sup>6</sup> We are not aware of any data or analyses to support that 1,000 µg/L as dissolved iron is protective of aquatic life. Therefore, we suggest that Utah revise the existing iron criterion to total recoverable to account for the toxicity that results from precipitated iron.

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<sup>4</sup> <https://www.epa.gov/wqc/national-recommended-water-quality-criteria>.

<sup>5</sup> Note dissolved organic carbon data would also facilitate adoption and use of the recommended copper Biotic Ligand Model for the protection of aquatic life.

<sup>6</sup> U.S. EPA. Quality Criteria for Water. July 1976.

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**Selenium** – In 2016, the EPA published an updated final CWA § 304(a) chronic aquatic life criterion for selenium in freshwater.<sup>7</sup> The 2016 criterion reflects the latest scientific knowledge, which indicates that selenium toxicity to aquatic life is primarily based on organisms consuming selenium-contaminated food rather than by being exposed only to selenium dissolved in water. The final criterion is expressed both in terms of fish tissue concentration (egg/ovary, whole body, muscle) and water concentration (lentic, lotic). (See Table 1 below.)

Table 1. Aquatic Life Ambient Water Quality Criterion for Selenium in Freshwater 2016.

Egg-Ovary <sup>1</sup> [mg/kg dw]	Chronic Selenium				Short-term
	Whole Body <sup>1</sup> [mg/kg dw]	Muscle <sup>1</sup> [mg/kg dw]	Water Lentic <sup>1</sup> [ug/L]	Water Lotic <sup>1</sup> [ug/L]	Water <sup>1</sup> [ug/L]
15.1	8.5	11.3	1.5 (30 day)	3.1 (30 day)	Intermittent exposure equation

<sup>1</sup>A note on hierarchy of table: when fish egg/ovary concentrations are measured, the values supersede any whole-body, muscle or water column elements except in certain situations. Whole body or muscle measurements supersede any water column element when both fish tissue and water concentrations are measured, except in certain situations. Water column values are derived from the egg & ovary concentrations via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of fish tissue measurements, such as waters where fish have been extirpated or where physical habitat and/or flow regime cannot sustain fish populations, or in waters with new discharges of selenium where steady state has not been achieved between water and fish tissue at the site.

The EPA also published four draft technical support documents that will facilitate the adoption and implementation of the new selenium criteria. The EPA recommends that Utah review these documents, with the 2016 criteria, and develop a state-wide plan to adopt and implement the updated selenium criteria recommendations.

#### *Human Health Criteria*

In 2015, the EPA published final updated ambient water quality criteria for the protection of human health for 94 chemical pollutants. These updated recommendations reflect the latest scientific information and EPA policies, including updated body weight, drinking water consumption rate, fish consumption rate, bioaccumulation factors, health toxicity values, and relative source contributions.<sup>8</sup> The EPA acknowledges and supports UDWQ’s and the Board’s significant efforts in adopting most of these updated human health criteria recommendations into Table 2.14.6 during the 2018 Utah WQS triennial review.

We note that for some of the parameters in EPA’s new/updated CWA § 304(a) human health criteria recommendations, Utah has adopted the more stringent Maximum Contaminant Level (MCL) established by the EPA under the Safe Drinking Water Act. The EPA supports retaining MCLs where those values are more stringent than the 304(a) criteria recommendations. For a pollutant for which the EPA has not published a recommended CWA § 304(a) criterion for "water + organisms" and for which the EPA has promulgated a Maximum Contaminant Level Goal (MCLG), the EPA generally recommends the MCLG for noncarcinogenic pollutants, or a criterion derived by recalculating the MCLG at an acceptable cancer risk level. The EPA does not recommend that the MCL be used where consideration of available treatment technology, costs, or availability of analytical methodologies has

<sup>7</sup> <https://www.epa.gov/wqc/aquatic-life-criterion-selenium>.

<sup>8</sup> <https://www.epa.gov/wqc/human-health-criteria-development-documents>.

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resulted in a MCL that is less protective than a MCLG.<sup>9</sup> The EPA recommends that UDWQ review the criteria in Table 2.14.6 that are based on a MCL to ensure consistency with the recommendations above.

**Methylmercury** – The EPA continues to recommend that Utah work towards adoption of the methylmercury criterion the EPA recommended in 2001<sup>10</sup> for the protection of people eating fish and shellfish. This criterion, 0.3 mg/kg fish tissue wet weight, was EPA’s first water quality criterion expressed as a fish and shellfish tissue value rather than as an ambient water column value. In April 2010, the EPA finalized technical guidance on how to implement the fish tissue-based criterion.<sup>11</sup> As discussed in Chapter 3 of the guidance, the EPA recommends working with stakeholders and the public to develop an implementation plan prior to moving forward with a rulemaking proposal. The EPA recognizes the complexity involved in implementing this criterion, and we are available to assist the State in this effort.

**Recreational Ambient Water Quality Criteria for Microcystins and Cylindrospermopsin** - The EPA released national recommendations for the Human Health Recreational Ambient Water Quality Criteria/Swimming Advisories for Microcystins and Cylindrospermopsin (AWQC/SA) in May 2019.<sup>12</sup> These AWQC/SA accurately reflect the latest scientific knowledge on the potential human health effects from recreational exposure to these two cyanotoxins. Primary contact recreation is protected in water bodies at or below the recommended concentrations of microcystins and cylindrospermopsin. The EPA acknowledges that UDWQ already uses the information provided in these recommendations when it developed triggers for posting swimming advisories.

As indicated in EPA’s fact sheet,<sup>13</sup> cyanobacteria are naturally occurring photosynthetic bacteria found in freshwater and marine habitats. Under certain environmental conditions, such as elevated levels of nutrients, warmer temperatures, still water, and plentiful sunlight, cyanobacteria can rapidly multiply to form “harmful algal blooms” (HABs). We acknowledge that HAB events appear to be occurring in Utah at increasing frequency over time, and UDWQ has developed significant monitoring, public notification and coordination protocols to address them. These HABs can result in adverse health effects to humans and animals. Exposure to elevated levels of microcystins can potentially lead to liver damage, and cylindrospermopsin toxicity can affect the kidneys and liver. EPA’s recommended magnitude for microcystins and cylindrospermopsin is as follows:

Table 3. EPA Recommended AWQC/SA for Microcystins and Cylindrospermopsin.

<b>Recommended magnitude for cyanotoxins</b>	
<b>Microcystins</b>	<b>Cylindrospermopsin</b>
8 ug/L	15 ug/L

For both cyanotoxins, the recommended duration and frequency depend on their application as a water quality criterion or a swimming advisory, as described in the criteria document and the fact sheet. Please note that the EPA also published national drinking water health advisories for these cyanotoxins. Also, the EPA has published Implementation Guidance, Fact Sheets and FAQs that are available along with

<sup>9</sup> See 65 Fed. Reg. 66444, 66450-66451 (November 3, 2000) available at <https://www.gpo.gov/fdsys/pkg/FR-2000-11-03/pdf/00-27924.pdf>.

<sup>10</sup> 66 Fed. Reg. 1344, 1355, (January 8, 2001).

<sup>11</sup> <http://www.epa.gov/waterscience/criteria/methylmercury/>.

<sup>12</sup> See <https://www.epa.gov/sites/production/files/2019-05/documents/hh-rec-criteria-habs-document-2019.pdf>.

<sup>13</sup> See <https://www.epa.gov/sites/production/files/2019-05/documents/hh-rec-criteria-habs-factsheet-2019.pdf>.



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the criteria recommendations document.<sup>14</sup> We recommend that Utah consider adopting EPA's recommended recreational water quality criteria for these cyanotoxins into R317-2 to improve protection of public health.

#### **Wetland Water Quality Standards**

With the assistance of EPA Wetland Program Development Grants (WPDGs), the Utah Department of Environmental Quality and collaborating colleagues have developed a robust wetlands program that has produced wetland mapping tools, sampling standard operating procedures (SOPs) specific to Utah's wetland types, assessment tools, characterization of the highest attainable condition for impounded wetlands, and a CWA § 401 certification program.<sup>15</sup> With over one million dollars in WPDGs (including match) used to specifically address WQS for wetlands, Utah has made significant advances in developing the policy and scientific foundations for wetland WQS protective of these important habitats. The EPA is particularly encouraged by these efforts. However, the EPA notes that though significant policy and scientific advances have occurred, wetlands WQS have not been adopted into R317-2. The EPA recommends that Utah prioritize making the necessary final steps to draft and adopt WQS protective of its wetlands ecosystems.

In 2016, the EPA published an online tool, with interactive templates to facilitate the development of protective WQS for wetlands.<sup>16</sup> The templates are separated into the three components: designated uses, criteria, and antidegradation. Customizing all three components to the needs of the state and its wetland resources will generate a narrative statement that serves as a wetland-specific WQS that will ensure consistent application of CWA provisions to wetlands. The EPA recommends that Utah review existing wetland data with the online material and consider the development and adoption of a narrative criterion that will provide robust protection of its wetlands and their functions, either as a whole or based on specific wetland types.

#### **Great Salt Lake Water Quality Criteria**

UDWQ has made significant strides in strengthening CWA programs as they apply to Great Salt Lake (GSL) through stakeholder coordination, scientific studies and monitoring, and improved implementation in programs such as UPDES permits. We applaud UDWQ's substantial efforts invested into these program areas and their long-term benefits to protect GSL's unique habitats. The EPA strongly supports UDWQ's ongoing efforts including metals toxicity studies under hypersaline conditions, fisheries and other biological population studies throughout the varied GSL habitats, and continued water quality monitoring. The unique ecology, chemistry, and hydrologic modifications of GSL have traditionally been thought to preclude application of state-wide criteria to GSL. Although this likely remains true for the hypersaline portions of GSL, the products from these recent studies have improved our understanding of the similarities and differences in the aquatic life using the different bays. We support continued dedicated efforts to develop water quality criteria applicable to portions of GSL. We recommend that Utah continue this work so that in the near future the existing uses in GSL can be fully protected under 40 C.F.R. § 131.10(i) and 131.11.

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<sup>14</sup> <https://www.epa.gov/wqc/recreational-water-quality-criteria-and-methods#rec3>.

<sup>15</sup> <https://deq.utah.gov/water-quality/wetlands-program/wetlands-program>.

<sup>16</sup> <https://www.epa.gov/wqs-tech/templates-developing-wetland-water-quality-standards>



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#### Conclusion

We thank UDWQ and the Board for the opportunity to comment on the upcoming triennial review, and hope our comments are helpful in developing the scope of the triennial revisions. We acknowledge and commend ongoing efforts by UDWQ and the Board to maintain and improve water quality in Utah. The EPA appreciates UDWQ's and the Board's efforts to ensure that Utah's rulemaking complies with the EPA's WQS Regulation at 40 C.F.R. Part 131. Please note that our comments are preliminary in nature and should not be interpreted as final EPA decisions under CWA § 303(c). If there are questions concerning our comments, please contact George Parrish (at 303-312-7027 or via email at [parrish.george@epa.gov](mailto:parrish.george@epa.gov)).

Sincerely,

**ANDREW  
TODD**

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ANDREW TODD  
Date: 2020.10.30  
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Dr. Andrew Todd, Chief  
Water Quality Section

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**Note:** No Triennial Review comments were received at the October 21, 2020 Public Hearing

**IV. Updated Standards Tracking Worksheet**

<b>Priority</b>	<b>Standards Issue</b>	<b>Discussion</b>	<b>2022 Goal</b>
1	Utah Lake Nutrient Criteria	The Utah Lake Nutrient criteria are being developed as part of a multi-year effort using the steering committee and expert panel paradigm.	Complete studies to support development of numeric criteria.
2	Current DO criteria not attainable at high elevation	Utah's dissolved oxygen criteria are not achievable at higher elevations. This can result in false-positive impairment decisions and impractical permit limits.	Propose revised standard to Water Quality Board
3	Compliance Schedule	Per federal regulations, States must have an authorizing provision in the water quality standards if compliance schedules are used for NPDES permits.	Propose authorizing provision to Water Quality Board
4	EPA 2001 Methylmercury Criteria	The fish tissue criterion should be added Table 2.14.6 and the water criterion moved from Table 2.14.2 to Table 2.14.6. The water criterion is based on protecting fish from accumulating mercury to unsafe levels for human consumption. The fish-tissue criterion will have primacy. Adding the fish tissue criterion will primarily affect assessments and assessment methods need to be developed to address implementation. Waters with current fish consumption advisories will potentially be impaired.	Propose revised standards to Water Quality Board
5	EPA 2013 Ammonia Criteria	The 2013 EPA criteria are more stringent than Utah's current criteria if unionid mussels are present. Utah has 2 unionid species but toxicity tests weren't available for these specific species when EPA updated the criteria. Testing was recently conducted for these 2 species (and 1 additional species) in California. Recalculating the 2013 EPA criteria using the California toxicity data results in unionids-present criteria for Utah that are similar to Utah's existing criteria which will decrease the impacts of the new criteria.	Update 2017 implementation guidance and then propose criteria to Water Quality Board

#### IV. Updated Standards Tracking Worksheet

Priority	Standards Issue	Discussion	2022 Goal
6	EPA 2018 Aluminum Criteria	<p>Currently, the 2018 EPA-approved biotic ligand model (BLM) may be applied as site-specific criteria. Under most water quality conditions in Utah, the BLM results in a less stringent criteria than the existing hardness- and pH-based criteria. The BLM will take precedence over the existing criteria when the data to support the BLM are available. Although BLM criteria are more refined than the existing hardness-based criteria, they require more analytical data and are more complex to implement. Aluminum is not a priority or toxic pollutant and discharges don't currently demonstrate reasonable potential. However, the BLM will provide a more efficient alternative to the TMDL process for resolving impairments. Adding the BLM to the existing criteria is anticipated to be simple. If the process or impacts are more complex than anticipated, updating the aluminum criteria may be tabled.</p>	Propose criteria to Water Quality Board
7	2016 Selenium Criteria	<p>The 2016 EPA criteria is hierarchal with the fish tissue criteria superseding water column criteria. The water criteria are more stringent than Utah's current criteria and selenium is common in Utah surface and waste waters. More stringent selenium criteria will impact existing discharge permits that may require changes to treatment processes. Idaho recently applied the species deletion procedure to EPA's criteria resulting in less stringent criteria. This process may be appropriate to apply to Utah. The Idaho criteria provide a modest increase in the water-based criteria (3.4 vs 3.1 vs Utah current 4.6 ug/L) and a larger difference in the fish muscle criteria (13.1 vs 11.3 mg/kg).</p>	Prepare implementation guidance that compiles existing data, includes recommendations for developing site-specific translators, and a schedule for adoption. The implementation guidance will include public review.
8	Great Salt Lake numeric criteria	<p>The 2014 Great Salt Lake Water Quality Strategy should be updated. Based on the outcomes of testing for brine shrimp and brine flies, the most sensitive use for Gilbert Bay aquatic life for inorganic pollutants will likely be birds. An aquaculture use with criteria based on the brine shrimp bioassays could be added for Gilbert Bay. Based on the compilation of species present in Bear River and Farmington Bays, freshwater criteria may be appropriate.</p>	Update of the Great Salt Lake Strategy for deriving aquatic life use criteria (Component 1)
9	Salinity criteria	<p>Increased salinity is a threat to Utah's agricultural designated use and aquatic life in the arid west. Utah should investigate these threats and consider implementing programs to protect the designated uses. One option is by the adoption of additional or more refined criteria to protect these uses. Options for criteria include TDS, chloride, and conductivity.</p>	Review existing efforts by EPA and other arid states to protect water quality for ions.

#### IV. Updated Standards Tracking Worksheet