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February 26, 2021

Ref: 8WD-CWQ

Jodi Gardberg, Manager
Watershed Protection Section
Utah Division of Water Quality
Department of Environmental Quality
195 North 1950 West
P.O. Box 144780
Salt Lake City, Utah 84114-4870

Re: The State of Utah's Draft 2022 303(d) Assessment Methods

Dear Ms. Gardberg:

The U.S. Environmental Protection Agency (EPA) Region 8 commends the work of the Utah Department of Environmental Quality, Division of Water Quality (UDWQ) on working towards a timely submittal of the 2022 303(d) list. We want to thank you for providing EPA the opportunity to review and provide comments on the Draft 2022 303(d) Assessment Methods. The comments outlined in the enclosure have also been uploaded via the on-line submission tool located at https://UDWQ.utah.gov/water-quality/submit-comments-draft-303d-assessment-methods-2022-integrated-report.

Thank you again for the opportunity to provide input and comments on this document. We look forward to continued collaboration with the UDWQ on the development of the 2022 303(d) List/Integrated Report. If you have questions or require additional information on these comments, please contact Shera Reems of my staff at 303-312-6888.

Sincerely

ANDREW TODD

Digitally signed by ANDREW TODD
Date: 2021.02.26 11:13:35 -07'00'

Andrew Todd, PhD
Manager, Water Quality Unit

cc: Shera Reems, EPA Water Quality Unit
George Parrish, EPA Water Quality Unit
Tina Laidlaw, EPA Water Quality Unit
Elise Hinman, Utah Division of Water Quality

Assessments Specific to Flowing Surface Waters of the State and Canals, Conventional Parameter Assessments

Grab Sample Assessments (Page 41)
Table 11 on Page 41 states that, "DO measurements collected by instantaneous/grab samples are assessed against the 30-day averages in UAC R317-2-14…" UDWQ does not specify in the assessment method how grab samples are compared against the 7-day average criteria or instantaneous minima. All three sets of DO criteria apply simultaneously and should be compared to all data sets containing sufficient data for a given 30-day, 7-day or instantaneous duration. See Table 2.14.2 Numeric Criteria for Aquatic Wildlife (8) available at https://rules.utah.gov/publicat/code/r317/r317-002.htm#/T16. The approach outlined in the Draft 2022 303(d) Assessment Methods may miss exceedances, especially for Class 3A and 3C waters, that may otherwise result in identifying the waterbody as impaired and placed on the 303(d) list for DO.

Minimum Dissolved Oxygen Recreated from Table 2.14.2

Parameter (mg/L) (2)(2a)	Aquatic Wildlife Use Class			
	3A	3B	3C	3D
30 Day Average	6.5	5.5	5.0	5.0
7 Day Average	9.5/5.0	6.0/4.0		
Minimum	8.0/4.0	5.0/3.0	3.0	3.0

Where two values are shown: 1st number is protective of Early Life Stages (ELS) present; 2nd number for ELS absent.

Assessment of High Elevation Streams (Pages 40 to 45)
While the application of the DO assessment methods to high elevation streams is not discussed, there may be situations where, because of the barometric pressure at higher altitudes, DO concentrations may be naturally lower. In these situations, the EPA-approved criteria found in the Utah Administrative Code R317-2-14 apply and should be used to make assessment decisions that follow the states DO assessment method described from pages 40 to 45. If there are concerns with the applicable water quality standards for high elevation streams, UDWQ may consider revising those criteria through the water quality standards triennial review process.

Additionally, according to 40 CFR §130.7(b)(5), "Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §130.7(b)(1) and 130.7(b)(2)." (see §130.7 Total maximum daily loads (TMDL) and individual water quality-based effluent limitations). To ensure UDWQ is meeting this requirement, EPA expects UDWQ to consider high frequency data in the development of the 2022 303(d) list.

Nutrient Assessments Specific to Headwater Streams (Pages 46 to 50)

On page 46, under the nutrient numeric criteria the growing season is defined, "…as the period of algal growth through senescence. For assessment purposes, UDWQ assumes that the growing season includes the months of June through September, although this may be lengthened where additional information demonstrates that a longer period of growth is warranted." EPA

recommends that UDWQ extend the end of the timeframe from September to November be considered as part of the assessment period to ensure senescence conditions that may affect respiration are represented.

To clearly communicate the decision framework for applying Utah's Numeric Nutrient Criteria (NNC) EPA recommends that UDWQ review the Assessment section in the Proposed Nutrient Criteria[1] and EPA's Action Letter[2], and update figures and tables in the assessment methods document as follows:

- delete Figure 6,
- move up Table 12 to the beginning of this section, and
- add Table 8 (provided below).[3]

Table 8. Decision Matrix That Will Be Used to Assess Support of Headwater Aquatic Life Uses for Nutrient-related Water Quality Problems

		Ecological Responses		
		No Data	< All Criteria	> Any Criterion
Nutrient Data (TN or TP)	No Data or < 4 Samples	Not Assessed[a]	Not Assessed[a]	Impaired (5)[b]
	< Low Threshold	Not Assessed[a]	Fully Supporting (1 or 2)[d]	Impaired (5) [b,e]
	Between Lower and Upper Threshold	Insufficient Data (3A)[c]	Fully Supporting (1 or 2)[d]	Impaired (5)
	Above Upper Threshold	Threatened (5)[f,]	Threatened (5)[e,f,]	Impaired (5)

Note: Associated *Integrated Report* categories are in parentheses.
[a]There are insufficient nutrient-related data to assess whether or not aquatic life uses are supported; however, aquatic life uses may be assessed with other water quality parameters.
[b]Sites where an ecological response threshold has been exceeded, but the lower TN and TP thresholds have not will be listed as impaired on the basis of a biological assessment; cause will be listed as unknown pending follow-up investigations.
[c]Sites where TN or TP fall below the upper threshold, but above the lower threshold, and lack measures for at least one response variable will not be assessed with respect to nutrients. These sites will be prioritized for follow-up monitoring.
[d]The integrated report distinguishes between sites where at least one parameter has been evaluated for all uses (Category 1) and sites where some uses are supported, and other uses are either not supported or not assessed (Category 2).
[e]Sites where nutrient and ecological response data are in conflict may be candidates for site-specific criteria.
[f]Sites below both the lower TN and TP thresholds with at least one response below the lower threshold will be considered to be fully supporting aquatic life uses unless another nutrient-related criterion (e.g., pH, DO) suggest otherwise.

Lower Nutrient Enrichment Level:

Page 47 states, "Any site where the growing season average of both TP and TN falls below the lower NNC thresholds (lowest enrichment tier) is considered to be supporting aquatic life uses with respect to nutrient enrichment (Figure 6)." The assessment methodology should be updated to indicate that:

[1] Utah Department of Environmental Quality. Division of Water Quality. *Proposed Nutrient Criteria: Utah Headwater Streams. Application of Stressor-Response Models and Multiple Lines of Evidence*. June 2019.
[2] EPA's Action on Revisions to UAC R317-2 *Standards of Quality for Waters of the State*. May 2020.
[3] Utah Department of Environmental Quality. Division of Water Quality. *Proposed Nutrient Criteria: Utah Headwater Streams. Application of Stressor-Response Models and Multiple Lines of Evidence*. June 2019.

- the waterbody will be considered as "not assessed" in situations where no ecological response data are available (see Table 8);
- a full support (Category 1 or 2) attainment decision requires collection of all three ecological response metrics with supporting data (see Table 8); and
- if any ecological response threshold is exceeded, the waterbody is placed on the 303(d) list as impaired on the basis of a biological assessment, and the cause will be listed as unknown pending follow-up investigations (see Table 12 on page 50 and Table 8 above).

Upper Nutrient Enrichment Level:

Page 47 states, "At the other end of the enrichment gradient, any site where the average TN or TP concentration exceeds the upper NNC threshold (high enrichment tier) is categorized as threatened unless degradation is confirmed by an ecological response, in which case it is considered impaired (not supporting aquatic life uses). Threatened AUs are designated as category 5 due to highly enriched conditions, but the Division commits to more thoroughly evaluate the AU for adverse nutrient-related responses. If no adverse responses are identified within the AU watershed or downstream, the site will be considered to be supporting aquatic life uses and reclassified accordingly in subsequent IR reports."

The last sentence contradicts Table 8 provided above, which communicates that in all cases an exceedance of the upper threshold is clear evidence of an impairment and results in the waterbody being considered threatened or impaired. In its approval of the upper thresholds, EPA noted, "The upper thresholds, reflective of the upper tail of the distribution of nutrient enrichment observed in Utah streams, are at levels where it is reasonable to conclude impairment and that confirmation with response indicators is not necessary."[4] [underline added]

Based on this information, EPA recommends UDWQ delete the following sentence on page 47 in the assessment methods document, "If no adverse responses are identified within the AU watershed or downstream, the site will be considered to be supporting aquatic life uses and reclassified accordingly in subsequent IR reports."

Moderate Nutrient Enrichment Level:

In Figure 6, Page 48, UDWQ indicates that a waterbody will be considered as "fully supporting" its aquatic life uses when the TN and TP values fall within the "moderate" range and when one of the ecological response indicators is meeting its associated threshold. This approach does not align with EPA's CWA-approval of the moderate range as a "combined criterion".

The EPA views the data and analysis [UDWQ] submitted as supporting the construction of the combined criterion that includes the threshold for filamentous algae cover "as a component of the full suite of all three response variables to determine that a stream fully supports its aquatic life uses."[5] [underline added] Therefore, for moderate enriched streams, EPA recommends UDWQ revise the assessment methodology to align with the EPA action that requires a

[4] EPA's Action on Revisions to UAC R317-2 Standards of Quality for Waters of the State. Page 7. May 1, 2020.
[5] EPA's Action on Revisions to UAC R317-2 Standards of Quality for Waters of the State. Page 7. May 1, 2020.

demonstration that all three ecological response indicators meet their associated thresholds for a stream to be considered as "fully supporting" its aquatic life uses.

Harmful Algal Blooms (Page 77)
UDWQ stated that, "For this IR cycle, harmful algal bloom (HAB) assessments are currently on hold while UDWQ develops and reviews implementation guidance and assessment methods based on recent EPA recommendations for water quality criteria for cyanotoxins (see Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsins). In future IR cycles, UDWQ expects to continue assessing recreational uses for the occurrence of HABs."

EPA recommends that UDWQ update the assessment method that was used for the 2018 / 2020 303(d) Cycle (see Final 2018 / 2020 303(d) Assessment Methods) to include EPA's recommended criteria for microcystins and cylindrospermopsins and apply this method for the 2022 303(d) Cycle.

According to 40 CFR §130.7(b)(5) requires that, "Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §130.7(b)(1) and 130.7(b)(2)." (see §130.7 Total maximum daily loads (TMDL) and individual water quality-based effluent limitations). To ensure UDWQ is meeting this requirement, EPA expects UDWQ to consider all available cyanotoxin and cyanobacteria cell count data in the development of the 2022 303(d) list.