

Docket No. 58-0102-1502

Idaho Aquatic Life Criteria for Copper



Idaho Board of Environmental Quality

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Idaho Aquatic Life Criteria for Copper

- Proposed rule adopting the EPA 304(a) recommended criteria
- Implementation Guidance for the Idaho Copper Criteria for Aquatic Life
 - Statewide Monitoring for Inputs to the Copper Biotic Ligand Model

Outline

- Why update?
- Background on the Biotic Ligand Model
- Negotiated Rulemaking and Guidance Development History
- Outstanding Issues

Why Update

- NOAA Fisheries, US Fish and Wildlife Service Biological Opinions – Hardness-based criterion was not protective
 - Reasonable and Prudent Alternative: New criteria by May 2017, no less stringent than EPA's 2007 304(a) copper criteria (Biotic Ligand Model)



Biotic Ligand Model

- BLM
 - Toxicity of copper is affected by various chemical characteristics in the water

Temperature	pH	Copper
Dissolved Organic Carbon	Humic Acid*	Calcium
Magnesium	Sodium	Potassium
Sulfate	Chloride	Alkalinity
Sulfide*		

*Humic Acid and Sulfide are input as constants for copper

How much does it cost?

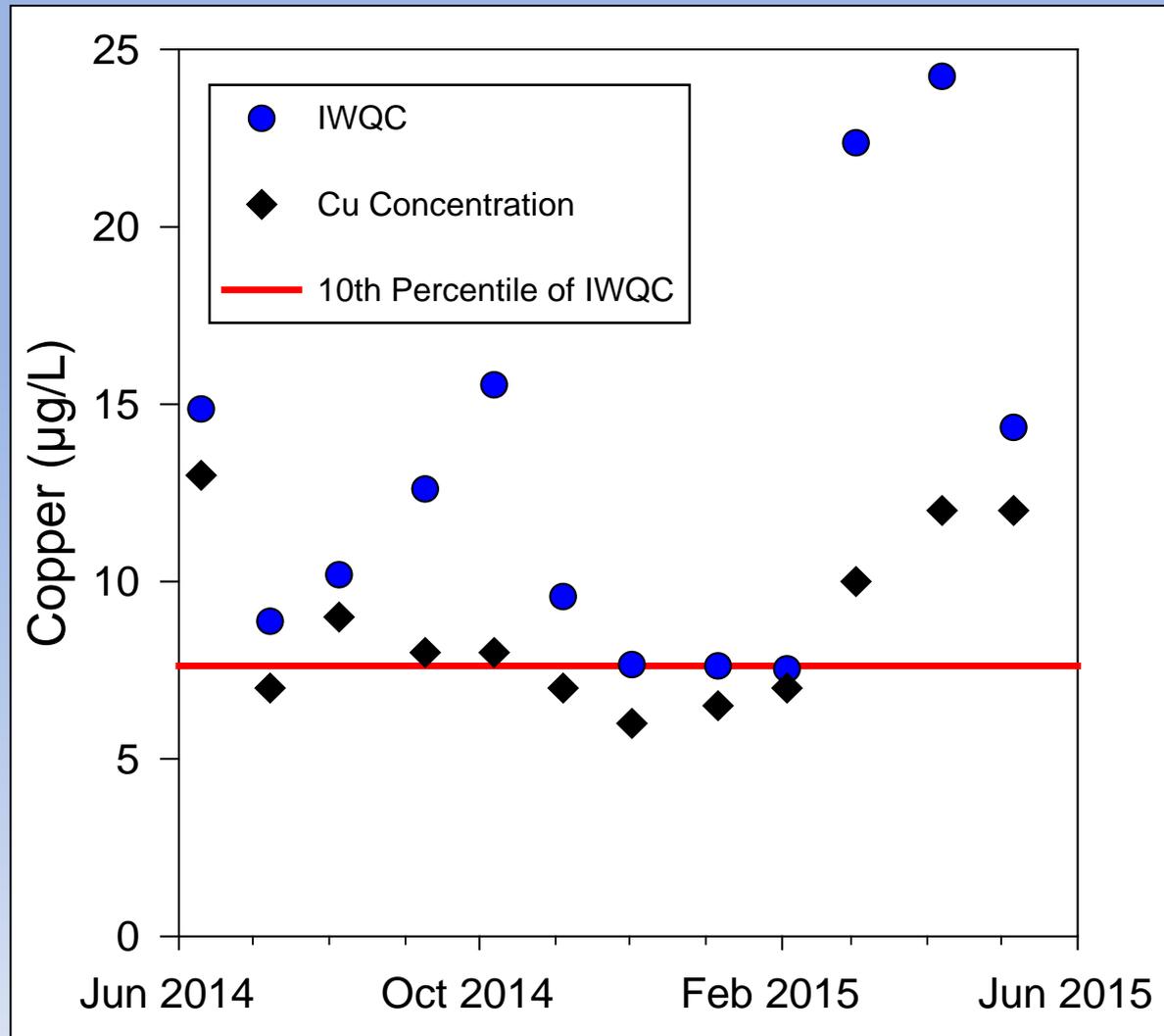
Parameter	Cost	Parameter	Cost
Temperature	Field measure	Magnesium	\$13.00
pH	Field measure	Sodium	\$13.00
Copper	\$13.00	Potassium	\$13.00
Dissolved Organic Carbon	\$40.00	Sulfate	\$19.00
Humic Acid %	Constant	Chloride	\$19.00
Calcium	\$13.00	Alkalinity	\$14.00
Sulfide	Constant		

Model is free, Data are not.

\$157.00 for BLM inputs

Costs estimated from Idaho State Bureau of Laboratories' price list

Instantaneous Water Quality Criterion



Negotiated Rulemaking and Guidance Development History

- 3 Negotiated Rulemaking Meetings
 - 12/11/2015,
 - 4/20/2016,
 - 6/2/2016
- Identified implementation issues
- Determined that we should develop guidance document and reference in rule

Negotiated Rulemaking and Guidance Development History

- 5 Guidance Development Meetings
 - 7/26/2016, 12/20/2016, 4/25/2017, 6/6/2017, 7/18/2017
- Monitored throughout Idaho (2016) to identify critical conditions
- Guidance provides for conservative *estimates* of criteria when data are not available

Implementation Guidance for the Idaho Copper Criteria for Aquatic Life

- Guidance addresses:
 - Using BLM to derive copper criteria
 - Accounting for spatial and temporal variability
 - Methods for estimating protective copper criteria when BLM input data are not available
 - Reconciling multiple instantaneous water quality criteria (IWQCs) to derive water quality criteria

Implementation Guidance for the Idaho Copper Criteria for Aquatic Life

Using the Biotic Ligand Model



State of Idaho
Department of Environmental Quality
Water Quality Division
1410 N. Hilton
Boise, Idaho 83706
August 2017

Implementation Guidance for the Idaho Copper Criteria for Aquatic Life

- Provides conservative copper criteria estimates that can be used when appropriate data are absent

Implementation Guidance for the Idaho Copper Criteria for Aquatic Life

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Comments to Proposed Rule

- Lack of specificity in Guidance- what to do when model input data are not available
- Lack of default numeric criteria in rule – chose instead to use conservative estimates of criteria
- Procedures outlined in guidance are not legally binding – EPA believes should be

