



WQS Workgroup Meeting

John Hoke, Watershed Protection Section

April 9, 2015



Water Quality Standards – 2015/2016 Review

- Public Notice of Intent to Initiate Triennial Review
 - May 2, 2014 until June 15, 2014
 - Seek input on topics for next triennial review
- Received input from municipal, industrial, agricultural and environmental interests.
- Held a series of stakeholder meetings to refine topics and determine readiness to proceed.



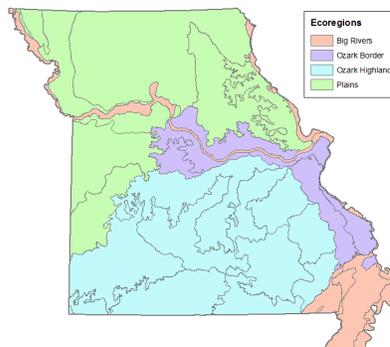
Water Quality Standards – 2015/2016 Review

- Revised Numeric Nutrient Criteria for Lakes
- Revisions to the pH criteria language
- Revised Section 304(a) criteria, with certain exceptions
- Addition of narrative criteria for downstream use protection
- Remove Table J “Losing Streams”; replace with reference
- Remove expired site-specific dissolved oxygen criteria



Revised Numeric Nutrient Criteria for Lakes

- General Lake Ecoregion Criteria (TP, TN, and Chl-a) protective of DWS and Aquatic Habitat Uses
- Alternate Lake Ecoregion Criteria (TP and TN) to account for variation in Chl-a response
- Maximum Ecoregion Chl-a criteria to slow lake trophic state transitions





Revised Numeric Nutrient Criteria for Lakes

Table L: General and Alternate Lake Ecoregion Criteria ($\mu\text{g/L}$)

Lake Ecoregion	TP	TN	Chl-a	Alternate Criteria	
				TP	TN
Plains (DWS)	20	500	10.0	35	650
Plains	40	750	20.0	60	1,000
Ozark Border	20	500	9.0	35	700
Ozark Highland	14	350	7.0	23	530

DWS refers to those lakes that are used as source water for drinking water supply.

- Plains: Chl-a < 40 $\mu\text{g/L}$
- Ozark Border: Chl-a < 22 $\mu\text{g/L}$
- Ozark Highlands: Chl-a < 15 $\mu\text{g/L}$



Revisions to the pH criteria language

- Revise 10 CSR 20-7.031(E)
- (E) pH. Water contaminants shall not cause the four-day average pH concentration of representative samples [pH] to be outside of the range of 6.5 to 9.0 standard pH units (chronic toxicity)
- Clarifies the duration and frequency of the pH range, and that the protection is against chronic toxicity



Revised Section 304(a) criteria

- Revisions to existing nationally derived criteria, with a few exceptions (aluminum, iron, manganese, ammonia, and bacteria)

Table A1		Aquatic Habitat Protection		Human Health Protection		DWS	IRR/LWP
POLLUTANT	CAS #	Acute (µg/l)	Chronic (µg/l)	Org. - Water (µg/l)	Org. Only (µg/l)		
METALS (µg/L)							
Aluminum (pH 6.5-9.0)	7429905	750					
Antimony	7440360			5.6	[4,300] 640	6	
Arsenic	7440382	340	[20] 150	0.018	0.014	[30] 10	100
Barium	7440393			1,000		2,000	
Beryllium	7440417		[3]			4	100



Narrative criteria – Downstream use protection

- Add narrative provision at 10 CSR 20-7.031(4) for the protection of downstream uses
- Waters shall maintain a level of water quality at their confluences to downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including the waters of another state.



Remove Table J “Losing Streams”

- Remove 10 CSR 20-7.031, Table J from regulation
- Replace with reference to Geological Survey geodatabase

CSR 10 CSR 20-7—DEPARTMENT OF NATURAL RESOURCES Division 20—Clean Water Commission

Table J—Losing Streams

Note: The losing streams' beginning and ending locations in the FROM and TO columns are expressed in conventional "Section, Township, Range" format. For example, the FROM location for the first "Clear Creek" listing below should read as follows: "The southeast quarter of the northeast quarter of the northwest quarter of Section 10 in Township 25 North, Range 27 West."

Stream Name	Counties	Miles	From	To
Calton Cr.	Barry	2.5	SE SE SE 18 25N 26W	SE SE SE 25 25N 27W
Calton Cr.	Barry	4.0	NE NE SE 12 25N 26W	W SW NW 16 25N 26W
Clear Cr.	Barry	4.0	SE NE NW 10 25N 27W	SE SE SW 31 26N 27W
Trib. to Clear Cr.	Barry	0.5	SE SW SW 35 26N 28W	NE SW NE 35 26N 28W
L. Flat Cr.	Barry	3.0	SE SE NE 36 25N 27W	NW NE NW 01 24N 27W
L. Flat Cr.	Barry	3.0	NW NW NW 35 25N 27W	SE SE NE 36 25N 27W
Trib. to Clear Cr.	Barry	0.5	SE SE NW 02 25N 28W	SE NE SE 35 26N 28W
Trib. to Clear Cr.	Barry	1.0	NW SE SW 01 25N 28W	NE SE SW 36 26N 28W
Trib. to Clear Cr.	Barry Lawrence	1.0	SW SE SW 34 26N 28W	NW NW SE 27 26N 28W
Trib. to Clear Cr.	Barry	1.0	SE NE SE 09 25N 27W	SW NW NW 09 25N 27W
Trib. to Clear Cr.	Barry	1.0	NW SW NW 08 25N 27W	NW NW SW 05 25N 27W
Hudson Cr.	Barry	4.0	SW SW SE 13 25N 28W	SW NW NW 16 25N 28W
Hudson Cr.	Barry	3.0	SW SE SE 29 25N 27W	SW SW SE 13 25N 28W



Remove expired site-specific criteria

- Remove expired and disapproved site-specific dissolved oxygen criteria from rule at 10 CSR 20-7.031, Table K
 - East Fork Locust Creek (Disapproved August 16, 2011)
 - Little East Fork Locust Creek (Disapproved August 16, 2011)
 - Pike Creek (Disapproved May 10, 2013)
 - Main Ditch (Disapproved May 10, 2013)
 - Sni-a-Bar Creek (Expired October 31, 2014)



Water Quality Standards – 2015/2016 Review

- **Meetings with Stakeholders** Oct 2014 – May 2015
- **RIR Public Notice** Jun 1, 2015 – Aug 1, 2015
- **Publication in Mo Register** Oct 1, 2015
- **Public Comment Period** Oct 1, 2015 – Feb 10, 2016
- **Public Hearing** January, 2016*
- **End of Comment Period** February 10, 2016
- **Response to Comment & Adoption** April, 2016*
- **Rule Effective** June 2016*