

DC Water Clarity Assessments



Overview

- 1** Setting
- 2** DC Water Quality Standards, Criteria, and Interpretation
- 3** Recent Assessment Results

Surface Water Beneficial Use Classes

1. Class A- primary contact recreation
2. Class B- secondary contact recreation
3. Class C - protection and propagation of fish, shellfish, and wildlife
4. Class D- fish consumption
5. Class E- navigation

DC Surface Waters

3 watersheds

36 waterbody segments- rivers and streams

Classification includes current and designated uses

Narrative related to Class C-

- streams maintained to support aquatic life
- concentrations of Chl a in algae shall not exceed levels that result in reduced water clarity, low DO

Constituent		Class A	Class B	Class C
Chlorophyll a^{a,b} (µg/L)(seasonal segment average)				
July 1 through September 30		—	—	25
Dissolved Oxygen (mg/L)				
Instantaneous minimum (year-round) ^c		—	—	5.0
February 1 through May 31 ^{a,b}				
7-day mean		—	—	6.0
Instantaneous minimum		—	—	5.0
June 1 through January 31 ^{a,b}				
30-day mean		—	—	5.5
7-day mean		—	—	4.0
Instantaneous minimum ^d		—	—	3.2
E. coli ^e (MPN/100 mL)				
Geometric mean (Geometric mean of 5 samples over a maximum period of 30 days)		126	—	—
Single Sample Value		410	—	—
Hydrogen Sulfide (maximum µg/L)		—	—	2.0
Oil and Grease (mg/L)		—	—	10.0
pH				
Greater than		6.0	6.0	6.0
And less than		8.5	8.5	8.5
Secchi Depth^{a,b} (m)(seasonal segment average)				
April 1 through October 31		—	—	0.8
Temperature (°C)				
Maximum		—	—	32.2
Maximum change above ambient		—	—	2.8
Total Dissolved Gases (maximum % saturation)		—	—	110
Turbidity Increase above Ambient (NTU)		20	20	20

Conventional Constituents Numeric Criteria Table

Footnotes:

^a Attainment of the dissolved oxygen, water clarity and chlorophyll *a* water quality criteria that apply to tidal influenced Class C waters will be determined following the guidelines documented in the 2003 United States Environmental Protection Agency publication: Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll *a* for the Chesapeake Bay and its Tidal Tributaries, EPA 903-R-03-002 (April 2003, Region III Chesapeake Bay Program Office, Annapolis, Maryland); 2004 Addendum, EPA 903-R-04-005 (October 2004); 2007 Addendum, EPA 903-R-07-003 CBP/TRS 285/07 (July 2007); 2007 Chlorophyll Criterion Addendum, EPA 903-R-07-005 CBP/TRS 288-07 (November 2007); 2008 Addendum, EPA 903-R-08-001 CBP/TRS 290-08 (September 2008); and 2010 Criterion Addendum, EPA 903-R-10-002 CBP/TRS-301-10 (May 2010).

^b Shall apply to only tidally influenced waters.

Assessment Criteria and Methodology

- Class C: District WQS include narrative criteria, bioassessment, physical habitat assessment, and numeric criteria for dissolved oxygen, temperature, pH, turbidity, secchi depth, total dissolved gases, hydrogen sulfide, oil & grease, Chlorophyll-*a*, inorganic compounds (mostly metals but including ammonia), and organic chemicals that apply to Class C waters for the protection of aquatic life.
- Operationally, attainment of the Class C use is evaluated using bioassessment, physical habitat assessment, and numeric criteria for dissolved oxygen, temperature, pH, turbidity, secchi depth, and inorganic compounds.

Assessment Method for Numeric Criteria

Constituent	DU Class	Water Quality Criterion	Assessment Metric	Non-attainment of Water Quality Criteria
Turbidity Increase above ambient	A, B, C	20 NTUs	Individual samples	>10% of the individual samples exceed the WQC
Secchi depth: seasonal segment average in tidal waters April 1 through October 31	C	0.8 m	Seasonal segment averages (April 1 through October 31) over the five-year assessment period.	Mean of seasonal segment averages exceeds the WQC
Chlorophyll-a: Seasonal average in tidal waters from July 1 to September 30	C	25 ug/L	Seasonal segment averages (July 1 through Sept 30) over the five-year assessment period.	Mean of seasonal segment averages exceeds the WQC

Decision Rules for Attaining Designated Uses

- Fully Supporting- all criterion numeric and narrative must be met
- Not Supporting- just one of the criterion numeric or narrative must not be met

Turbidity Exceedances for Select Waterbodies

Waterbody	2020 % Exceedances	2022 % Exceedances
Potomac River	17.36	13.70
Anacostia River	15.70	17.09
Rock Creek	15.52	15.39
Kingman Lake	43.16	50.62
Rock Creek Tribs	4.23	5.59
Anacostia River Tribs	25.37	29.76

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