

Temperature of Waters Discharged from Dams, Reservoirs, and Hydroelectric Facilities

Rule

Dissolved Oxygen Standards for Waters Discharged from Dams, Reservoirs, and Hydroelectric Facilities (IDAPA 58.01.02.276)

Under the terms specified under this section, waters discharged from dams, reservoirs and hydroelectric facilities shall not be subject to the provisions of Subsection 250.02.a. or 250.02.f.i.

- 01. Applicability.** *Subsections 276.02, 276.03 and 276.04 shall apply to all waters below dams, reservoirs, and hydroelectric facilities as far downstream as the point of measurement as defined in Subsection 276.05. Downstream of that point of measurement, all discharges to the waters shall be subject to the provisions of Subsections 250.02.a. or 250.02.f.i.*
- 02. Dissolved Oxygen Concentrations Below Existing Facilities.** *As of the effective date of these regulations, and except as noted in Subsections 276.03 and 276.04, waters below dams, reservoirs, and hydroelectric facilities shall contain the following dissolved oxygen concentrations during the time period indicated:*

	<i>mg/l Dissolved Oxygen</i>		
<i>Time Period (annually)</i>	<i>30-day Mean</i>	<i>7-Day Mean Minimum</i>	<i>Instantaneous Minimum</i>
<i>June 15 - Oct 15</i>	6.0	4.7	3.5

- 03. Dissolved Oxygen Concentrations for Modifications of Existing Facilities or for New Facilities.** *Modifications of existing facilities or new facilities are subject to the provisions of Subsection 276.02 unless the state has documented the existence of significant fish spawning areas below the facility. If such areas exist, then waters below those facilities shall contain the dissolved oxygen concentrations shown in Subsection 276.02 during the modified time periods indicated for each species below:*

<i>Fish Species</i>	<i>Time Period (annually)</i>
<i>Cutthroat trout</i>	<i>July 1 - Oct 15</i>
<i>Kokanee and Chinook Salmon</i>	<i>June 15 - Aug 1</i>

Bull Trout	June 15 - Sept 1
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04. Dissolved Oxygen Concentrations Below American Falls Dam. All waters below American Falls Dam shall contain the following dissolved oxygen concentrations during the time period indicated:

Time Period (annually)	mg/l Dissolved Oxygen		
	30-Day Mean	7-Day Mean Minimum	Instantaneous Minimum
May 15 - Oct 15	5.5	4.7	3.5

05. Point of Measurement. For the purpose of determining compliance with Subsections 276.02, 276.03 and 276.04, the dissolved oxygen shall be measured at a single location in the river downstream from the hydroelectric facilities. Such location shall be as close to the facilities as practical to obtain a representative measurement, but in all cases shall be sufficient distance downstream to allow thorough mixing of reaerated waters, spilled by-pass waters, and other waters that have passed through the facility.

06. Instantaneous Minimum. Any measurement of dissolved oxygen below the applicable instantaneous minimum will be considered a violation unless that measurement is followed by two (2) consecutive measurements at or above the instantaneous minimum and taken within twenty (20) minutes of the initial measurement (at ten (10) minute intervals).

07. Procedures and Conditions for Variances. The Board may grant a variance, on an individual basis, to the dissolved oxygen standards, the applicable dates of compliance, or both, as listed in Subsections 276.02, 276.03, or 276.04 only if:

- a. A written petition requesting a variance is submitted to the Department;
- b. The petition includes documentation of site-specific biological studies which demonstrate that no significant fishery impacts will occur as a result of the variance, if granted; and
- c. The requested variance will not result in departure from the three point five (3.5) mg/l instantaneous minimum dissolved oxygen requirements of this section.

Discussion

Dams and other water impoundments have a measurable effect upon the quality of water in their outflows. Similar to dissolved oxygen (DO), the temperature of streams below major dams/impoundments is dictated by outflows from those impoundments. Due to the methods by which water bodies are identified in the water quality standards tables, it is possible for a single water body unit to be composed of both a lake/reservoir and the outlet stream. This single water body unit may be designated for cold water aquatic life, and the associated criteria applied regardless of whether the outlet receives top or bottom flow from the lake/reservoir. The current rule language is specific to dissolved oxygen criteria excursions and does not address temperature. Similar to dissolved oxygen, temperature in these outlet streams may be different than reference conditions established for streams. This is also true of the outlet streams from natural lakes.

Currently the temperature in the lake is clearly addressed through language in Idaho's rules that allows for natural conditions of temperature in the lake/impoundment. While it can be said that Idaho's natural conditions provision in section 200.9 applies to the warmer water in the outlet stream, the question remains as to what is "natural" for an impounded stream; there is no denying that the water quality in a lake/impoundment outlet is determined entirely by the water quality of the upstream lake/impoundment. These quality parameters extend beyond DO, but the rule currently does not address these other parameters. DEQ suggests that temperature provisions should be added to this section of the rules.

It is important to address this in the context of downstream protection because downstream use protection is of growing concern. If we do not change our expectations for these particular downstream waters, we may inadvertently change our expectations for the lakes that feed them. This would be to ignore the physical reality of these systems.