

## 15A NCAC 02B .0206 FLOW DESIGN CRITERIA FOR EFFLUENT LIMITATIONS

(a) Water quality based effluent limitations shall be developed to allow appropriate frequency and duration of deviations from water quality standards so that the designated uses of receiving waters are protected. There are water quality standards for a number of categories of pollutants and to protect a range of water uses. For this reason, the appropriate frequency and duration of deviations from water quality standards shall not be the same for all pollutants. A flow design criterion shall be used in the development of water quality based effluent limitations as a simplified means of estimating the acceptable frequency and duration of deviations. Effluent limitations shall be developed using the following flow design criteria:

- (1) All standards except toxic substances and aesthetics shall be protected using the minimum average flow for a period of seven consecutive days that has an average recurrence of once in ten years (7Q10 flow). Other governing flow strategies, such as varying discharges with the receiving waters ability to assimilate wastes, may be designated by the Commission or its designee on a case-by-case basis if the discharger or permit applicant provides evidence that establishes that the alternative flow strategies will give equal or better protection for the water quality standards. "Better protection for the water quality standards" means that deviations from the standard would be expected less frequently than provided by using the 7Q10 flow.
- (2) Toxic substance standards to protect aquatic life from chronic toxicity shall be protected using the 7Q10 flow.
- (3) Toxic substance standards to protect aquatic life from acute toxicity shall be protected using the 1Q10 flow.
- (4) Toxic substance standards to protect human health shall be the following:
  - (A) The 7Q10 flow for standards to protect human health through the consumption of water, fish, and shellfish from noncarcinogens; and
  - (B) The mean annual flow to protect human health from carcinogens through the consumption of water, fish, and shellfish unless site specific fish contamination concerns necessitate the use of an alternative design flow;
- (5) Aesthetic quality shall be protected using the minimum average flow for a period of 30 consecutive days that has an average recurrence of once in two years (30Q2 flow).

More complex modeling techniques may also be used to set effluent limitations directly based on frequency and duration criteria published by the U.S. Environmental Protection Agency, available free of charge at <http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm> and incorporated by reference, including subsequent amendments and editions, and the Commission or its designee has determined, on a case-by-case basis, that the techniques will protect the designated uses of receiving waters.

(b) If the stream flow is regulated, a minimum daily low flow may be used as a substitute for the 7Q10 flow, except in cases where there are acute toxicity concerns for aquatic life. In the cases where there are acute toxicity concerns, an alternative low flow, such as the instantaneous minimum release, shall be approved if the Director determines, on a case-by-case basis, that the designated uses of receiving waters are protected.

(c) Flow design criteria shall be used to develop water quality based effluent limitations and in the design of wastewater treatment facilities. Deviations from a specific water quality standard resulting from discharges that are demonstrated to be in compliance with water quality based effluent limitations for that standard shall not be a violation pursuant to G.S. 143-215.6 when the actual stream flow is less than the design flow.

(d) If the 7Q10 flow of the receiving stream is estimated to be zero, water quality based effluent limitations shall be assigned as follows:

- (1) If the 30Q2 flow is estimated to be greater than zero, effluent limitations for new or expanded (additional) discharges of oxygen consuming waste shall be set at BOD<sub>5</sub> = 5 mg/l, NH<sub>3</sub>-N = 2 mg/l and DO = 6 mg/l, unless it is determined by the Director through modeling or other analysis that these limitations will not protect water quality standards. Requirements for existing discharges shall be determined on a case-by-case basis by the Director. More stringent limits shall be applied if violations of water quality standards are predicted to occur for a new or expanded discharge with the limits set pursuant to this Rule or if existing limits are determined to be inadequate to protect water quality standards.
- (2) If the 30Q2 and 7Q10 flows are both estimated to be zero, no new or expanded discharge of oxygen consuming waste shall be allowed. Requirements for existing discharges to streams where the 30Q2 and 7Q10 flows are both estimated to be zero shall be determined on a case-by-case basis.

- (3) Other water quality standards shall be protected by requiring the discharge to meet the standards set forth in this Subchapter, unless the Director determines that alternative limitations protect the classified water uses.
- (e) Receiving water flow statistics shall be estimated through consultation with the U.S. Geological Survey. Estimates for any given location may be based on actual flow data, modeling analyses, or other methods determined to be appropriate by the Commission or its designee.

*History Note: Authority G.S. 143-214.1; 143-215.3(a)(1);  
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1985;  
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