

15A NCAC 18C .0710 OTHER WATER TREATMENT PLANTS

Water treatment plants which provide conventional filtration treatment, as defined in Rule .0102 of this Subchapter, but do not meet the minimum design criteria for process flow times established in this Rule, may be approved to treat high quality source waters under the following conditions:

- (1) A proposal shall be presented to the Department to justify deviation from minimum criteria. The proposal shall include an engineering report containing information and data to substantiate high source water quality characteristics and demonstrate water treatment plant effectiveness.
- (2) The flocculation process shall have a minimum of 20 minutes theoretical detention time.
- (3) The sedimentation compartment shall utilize tube settlers, plates or equivalent settling enhancement mechanisms and have a minimum of 30 minutes detention time.
- (4) The filter media shall be a minimum of 24 inches in depth and consist of dual or multi-media.
- (5) The source waters shall be derived from watersheds which are classified as WS-I, WS-II or WS-III and shall be protected from sources of pollution as determined by a sanitary survey in accordance with Rule .0202 of this Subchapter.
- (6) The following raw water quality standards shall apply:
 - (a) WS-I, WS-II or WS-III raw water quality standards established by the Environmental Management Commission shall be met.
 - (b) In addition to Sub-Item (6)(a) of this Rule, the following maximum concentration of turbidity, coliform, fecal coliform and color shall be allowed in the water plant influent water, based on sedimentation time provided by the water treatment plant. Off-stream pre-treatment to maintain these standards shall be provided as specified in Item (7) of this Rule.

SED TIME	4 hrs.	2 hrs.	1 hr.	½ hrs.
Turbidity (NTU)	150	75	50	25
Coliform/100 ml	3,000	2,000	1,000	500
Fecal coliform/100 ml	300	200	100	50
Color (CU)	75	60	40	20

Note: Uneven values are to be interpolated.

- (c) Maximum allowable fluctuations in turbidity, coliform, fecal coliform, color (up to the maximum of Sub-Item (6)(b) of this Rule, chemicals and other water quality characteristics shall be established by a pilot study conducted in accordance with Rule .0714 of this Section.
 - (d) The allowable raw water concentration of all other contaminants, for which drinking water standards are established in this Subchapter, shall be based on the removal capacity of the water plant as demonstrated in a pilot study conducted in accordance with Rule .0714 of this Section.
- (7) Off-stream pre-treatment/storage reservoirs shall be provided to maintain the raw water quality standards of Item (6) of this Rule, equalize fluctuations and provide an unpolluted storage reserve in the event of contaminant spills as follows:
- (a) Off-stream pre-treatment/storage reservoirs shall not be required for source waters derived from uninhabited watersheds classified WS-I if it is demonstrated that the raw water quality standards and fluctuations of Item (6) of this Rule are maintained in the water treatment plant influent water.
 - (b) Off-stream pre-treatment/storage shall not be required for source waters derived from Class I, II or III reservoirs on WS-I, WS-II or WS-III watersheds if an engineering report demonstrates to the Department the source is not vulnerable to spills and that the water quality standards and fluctuations of Item (6) of this Rule can be maintained in the water plant influent water.
 - (c) For all other source waters derived from WS-I, WS-II or WS-III watersheds, a minimum of five days off-stream pre-treatment/storage shall be provided. An engineering report as described in Item (1) of this Rule shall be submitted to demonstrate that five days storage is adequate or to determine the greater storage needed to maintain the raw water quality standards and fluctuations of Item (6) of this Rule in the water treatment plant influent water.
 - (d) When terrain or space constraints make it infeasible to construct a pre-treatment/storage reservoir, a mechanical pre-treatment system may be approved when an engineering report demonstrates to the Department that the source is not vulnerable to contaminant spills and that

the raw water quality standards and fluctuations of Item (6) of this Rule can be maintained in the water treatment plant influent water.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.