

WAC 246-290-660 Filtration. (1) Turbidity performance requirements.

(a) The purveyor shall ensure that the turbidity level of representative filtered water samples:

(i) Complies with the performance standards in Table 11;

(ii) Never exceeds 5.0 NTU for any system using slow sand, diatomaceous earth;

(iii) Never exceeds 1.0 NTU for any system using conventional, direct, or in-line filtration; and

(iv) Never exceeds the maximum allowable turbidity determined by the department on a case-by-case basis for any system using an alternative filtration technology approved under WAC 246-290-676 (2) (b).

Table 11

TURBIDITY PERFORMANCE STANDARDS

Filtration Technology	Filtered water turbidity (in NTUs) shall be less than or equal to this value in at least 95% of the measurements made each calendar month
Conventional, Direct and In-line	0.30
Slow Sand	1.0
Diatomaceous Earth	1.0
Alternative Technology	As determined by the department through case-by-case approval of technology, under WAC 246-290-676 (2)(b).

(b) The department may allow the turbidity of filtered water from a system using slow sand filtration to exceed 1.0 NTU, but never 5.0 NTU, if the system demonstrates to the department's satisfaction that the higher turbidity level will not endanger the health of consumers served by the system. As a condition of being allowed to produce filtered water with a turbidity exceeding 1.0 NTU, the purveyor may be required to monitor one or more parameters in addition to the parameters specified under WAC 246-290-664. The department shall notify the purveyor of the type and frequency of monitoring to be conducted.

(2) *Giardia lamblia*, *Cryptosporidium*, and virus removal credit.

(a) The department shall notify the purveyor of the removal credit granted for the system's filtration process. The department shall specify removal credit for:

(i) Existing filtration facilities based on periodic evaluations of performance and operation; and

(ii) New or modified filtration facilities based on results of pilot plant studies or full scale operation.

(b) Conventional, direct, and in-line filtration.

(i) The removal credit the department may grant to a system using conventional, direct, or in-line filtration and demonstrating effective treatment is as follows:

Filtration Technology	Percent Removal Credit (log)					
	<i>Giardia</i>		Virus		<i>Cryptosporidium</i>	
	Percent	log	Percent	log	Percent	log
Conventional	99.7	2.5	99	2.0	99	2.0
Direct and in-line	99	2.0	90	1.0	99	2.0

(ii) A system using conventional, direct, or in-line filtration shall be considered to provide effective treatment, if the purveyor demonstrates to the satisfaction of the department that the system meets the:

(A) Turbidity performance requirements under subsection (1) of this section; and

(B) Operations requirements of WAC 246-290-654.

(iii) The department shall not grant removal credit to a system using conventional, direct, or in-line filtration that:

(A) Fails to meet the minimum turbidity performance requirements under subsection (1) of this section; or

(B) Fails to meet the operating requirements under WAC 246-290-654.

(c) Slow sand filtration.

The department may grant a system using slow sand filtration 99 percent (2-log) *Giardia lamblia* cyst and *Cryptosporidium* oocyst removal credit and 99 percent (2-log) virus removal credit, if the system meets the department design requirements under WAC 246-290-676 and meets the minimum turbidity performance requirements in subsection (1) of this section.

(d) Diatomaceous earth filtration.

The department may grant a system using diatomaceous earth filtration 99 percent (2-log) *Giardia lamblia* cyst and *Cryptosporidium* oocyst removal credit and 90 percent (1 log) virus removal credit, if the system meets the department design requirements under WAC 246-290-676 and meets the minimum turbidity performance requirements in subsection (1) of this section.

(e) Alternative filtration technology.

The department shall grant, on a case-by-case basis, *Giardia lamblia* cyst, *Cryptosporidium* oocyst, and virus removal credit for systems using alternative filtration technology based on results of product testing acceptable to the department.

(f) The purveyor granted no *Giardia lamblia* cyst removal credit and no *Cryptosporidium* oocyst removal credit shall:

(i) Provide treatment under WAC 246-290-662 (2) (d); and

(ii) Within ninety days of department notification regarding removal credit, submit an action plan to the department for review and approval. The plan shall:

(A) Detail how the purveyor plans to comply with the turbidity performance requirements in subsection (1) of this section and operating requirements of WAC 246-290-654; and

(B) Identify the proposed schedule for implementation.

(iii) Be considered in violation of the treatment technique specified in WAC 246-290-632 (2) (a) (i) and shall take follow-up action specified in WAC 246-290-634.

(g) Higher level removal credit.

(i) The department may grant a higher level of *Giardia lamblia*, *Cryptosporidium*, and virus removal credit than listed under (b) through (e) of this subsection, if the purveyor demonstrates to the department's satisfaction that the higher level can be consistently achieved.

(ii) As a condition of maintaining the maximum removal credit, purveyors may be required to periodically monitor one or more parameters not routinely monitored under WAC 246-290-664. The department shall notify the purveyor of the type and frequency of monitoring to be conducted.

(3) Disinfection byproduct precursor removal requirements.

(a) Conventional systems using sedimentation shall meet the treatment technique requirements for control of disinfection byproduct precursors specified in 40 C.F.R. 141.135.

(i) Applicability of this requirement shall be determined in accordance with 40 C.F.R. 141.135(a).

(ii) Enhanced coagulation and enhanced softening shall be provided in accordance with 40 C.F.R. 141.135(b), if applicable.

(iii) Compliance with the treatment technique requirements for control of disinfection byproduct precursors shall be determined in accordance with 40 C.F.R. 141.135(c).

(b) For the purposes of compliance with (a) of this subsection, sedimentation shall be considered applicable when:

(i) Surface overflow rates and other design parameters are in conformance with traditionally accepted industry standards and textbook values, such as those prescribed in nationally accepted standards, including the most recent version of the *Recommended Standards for Water Works, A Committee Report of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers*; and

(ii) The system has received pathogen removal credit for the sedimentation basin.

(4) Filter backwash recycling requirements.

(a) Purveyors using conventional, direct, or in-line filtration must **report** to the department, in writing, whether they recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within the treatment plant. Purveyors that **do** recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must also report the following information:

(i) A plant schematic showing the origin of all flows that are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance (i.e., pipe, open channel) used to transport them, and the location where they are reintroduced back into the treatment plant.

(ii) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and the approved operating capacity for the plant.

(b) Purveyors using conventional, direct, or in-line filtration that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within the treatment plant shall:

(i) Return the recycled flow prior to, or concurrent with the location where primary coagulant is introduced into the flow stream.

(ii) By no later than June 8, 2006, complete any capital improvements (physical modifications requiring engineering planning, design, and construction) necessary to meet the requirements of (b)(i) of this subsection.

(iii) On a case-by-case basis, the department may approve an alternate location for the return of recycle flows.

[Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 17-01-062, § 246-290-660, filed 12/14/16, effective 1/14/17. Statutory Authority: RCW 70.119A.180 and 43.20.050. WSR 08-03-061, § 246-290-660, filed 1/14/08, effective 2/14/08. Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 04-04-056, § 246-290-660, filed 1/30/04, effective 3/1/04. Statutory Authority: RCW 43.20.050 (2) and (3) and 70.119A.080. WSR 03-08-037, § 246-290-660, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. WSR 99-07-021, § 246-290-660, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. WSR 94-14-001, § 246-290-660, filed 6/22/94,

effective 7/23/94; WSR 93-08-011 (Order 352B), § 246-290-660, filed 3/25/93, effective 4/25/93.]