

Wastewater System Design Criteria Stakeholder Group Meeting

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**PETITION TO ADD REHABILITATION
CRITERIA**

SUBCHAPTER A

ADMINISTRATIVE REQUIREMENTS

Previous Design Criteria

- Section to 217.1 (Applicability)
- Adding a section to clarify the grandfathering clause. Stating that the existing wastewater treatment system is subject to design requirements at the time of approval.

Definitions

- Maintenance
- Rehab
- Renovation
- Surcharge
- Auxiliary pump
- Gravity relief sewer
- Equalization basin
- Design Flow
- Grinder pump

SUBCHAPTER B
TREATMENT FACILITY DESIGN
REQUIREMENTS

Table B.1. - Design Organic Loadings and Flows for a New Facility

Source	Remarks	Daily Wastewater Flow (gallons/person)	Wastewater Strength (mg/l BOD₅)
Municipality	Residential	75-100	200-350
Subdivision	Residential	75-100	200-350
Trailer Park (Transient)	2½ Persons per Trailer	50-60	250-300
Mobile Home Park	3 Persons per Trailer	50-75	300
School	Cafeteria & Showers	20	300
	Cafeteria/No Showers	15	300
Recreational Parks	Overnight User	30	200
	Day User	5	100
Office Building or Factory	A facility must be designed for the largest shift	20	300
Hotel/Motel	Per Bed	50-75	300
Restaurant	Per Meal	7-10	1000*
Restaurant with bar or cocktail lounge	Per Meal	9-12	1000*
Hospital	Per Bed	200	300
Nursing Home	Per Bed	75-100	300
Alternative Collection Systems (Subchapter D)	Per Capita	75	N/A
*Based on a restaurant with a grease trap			

Changes to Table B.1.

Add a column to the Table for $\text{NH}_3\text{-N}$
Look at revising the BOD_5 strength
upward.

Clarifications

- Clarify the differences between the permitted flow from max 30 day average and annual average.
- Clarify the minimum information needed to rerate a wastewater treatment plant.
- Emergency power requirements in 217.36 and 217.63 are consistent.
- Flow measurement weirs for small plants.

SUBCHAPTER C

CONVENTIONAL COLLECTION SYSTEMS

Pipe Design

- Clarify intent related to gaskets on pressure rated pipe when 9 foot separation from water lines cannot be provided or add a requirement that gaskets operate properly at atmospheric pressure
- Correct 217.53(k)(4) to refer to the structural calculations in 217.53(k)(2)
 - Currently refers to 217.53(k)(3), which provides the pipe stiffness equation required in 217.53(k)(2)

Testing Requirements for Gravity Pipes

- Consider reducing the maximum allowable leakage in the infiltration/exfiltration test
 - Currently 50 gallons per inch diameter per mile of pipe per day

Gravity Pipes

- Add requirements for Polypropylene Pipe

Manholes

- Clarify where bolted and gasketed manholes are required
- Add a requirement for engineer to specify an appropriate national reference standard for sealing manhole covers

Testing Requirements for Manholes

- Allow ASTM testing requirements for manholes
- Correct units in 217.58(b)(2)(d), related to tightening external clamps on the vacuum testing cover

Lift Stations

- Clarify allowable fence types and set 8 feet as the minimum fence height
- Clarify intent for above ground valves
 - Concrete pad adjacent to wet well O.K. (fenced)
 - Locked/chained in the fence
 - Tamper-resistant structure allowable
- Consider swing-type valves that do not have external levers

Lift Stations

- Add backup high water float requirement for wet well level detection
- Other clarifications
 - Control pad must be large enough for personnel to do electrical work safely
 - Ladders and access hatches must also meet OSHA
 - Non-corrosive vents for all lift stations
 - Explosion-proof equipment for all lift stations
 - Dry well pumps must discharge to wet well

Lift Stations

- Other clarifications (cont.)
 - Hoisting equipment and access
 - Separate pipes for sump pumps
 - Expected peak flow for firm pumping capacity

Emergency Provisions for Lift Stations

- Clarify that generators or auxiliary pumps can may be used
- Add minimum fuel tank size requirements based on hours of fuel
- Add a section for gravity relief sewers
- Clarify quick connection design and generator electric loading design

Force Mains

- Add fatigue life calculation requirements
- Consider basing minimum velocities on the smallest pump operating at full speed
 - Consider additional flushing requirement for variable speed pumps that normally operate below minimum velocities
- Clarify that air release valves must be noncorrosive

Reclaimed Water

- Remove requirement that electrical equipment be operable during a 100 year flood event
 - Consider requirement that equipment be operable after a 100 year flood event
- Consider swing-type valves that do not have external levers

SUBCHAPTER E

PRELIMINARY TREATMENT UNITS

Clarifications

- Clarify the requirements the on EQ basin
- Correct the spelling on Coarse Screen.

SUBCHAPTER F
ACTIVATED SLUDGE SYSTEMS

Clarifier

- Clarify and update the flow velocity in the sludge pipe.

Membrane Bioreactor Systems

- Clarify and update the nutrient removal requirements.

Aeration Sizing Equipment

- Clarify the oxygen requirement for high $\text{NH}_3\text{-N}$ plant.
- Corrected the units in equation F2
- Add a table showing the max allowed % transfer efficiency a varying depth for fine and coarse bubble
- Other Clarifications

Solids Management

- Add a new section for Airlift Pump (217.159)

Advanced Nutrient Removal

- Rewrite this section requiring the engineering to submit all calculation on nutrient removal.

SUBCHAPTER G

FIXED FILM AND FILTRATION UNITS

Cloth Filters

- Add requirements for cloth filters and other similar filters

SUBCHAPTER H

NATURAL TREATMENT FACILITIES

Natural Systems

- Correct pond liner permeability requirements
- Correct aerated pond treatment efficiency equation

SUBCHAPTER K

CHEMICAL DISINFECTION

Chlorination/Dechlorination Systems

- Clarify intent related to tank placement for spill containment
- Allow a minimum length to width ratio as an alternate to modeling for chlorine mixing

SUBCHAPTER M

SAFETY

Pipe Color Coding

- Updating the pipe color coding to be consistent with the MOP 8 and National Plumbing Codes.