Design Criteria for Domestic Wastewater Systems (30 TAC Chapter 217)

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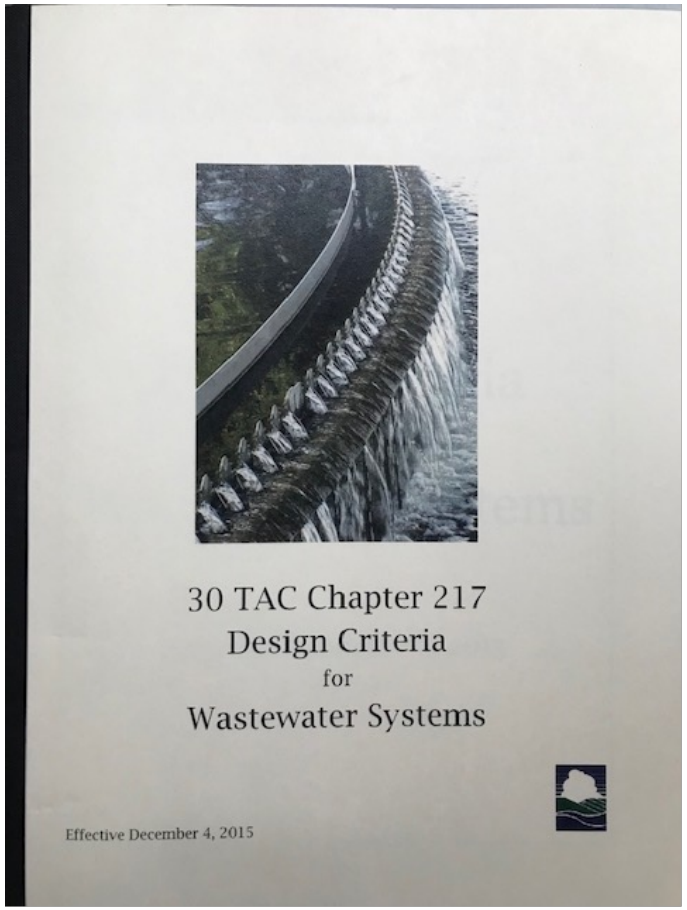
TCEQ Water Quality Division – Wastewater Plans & Specs Review
May 16, 2032

Presentation Outline

- Current Chapter 217
- Summary Transmittal Letter
- Chapter 217 Update

Current Chapter 217



Current Chapter 217

Subchapter A	• Administrative Requirements
Subchapter B	• Treatment Facility Design Requirements
Subchapter C	• Conventional Collection Systems
Subchapter D	• Alternative Collection Systems
Subchapter E	• Preliminary Treatment Units
Subchapter F	• Activated Sludge Systems
Subchapter G	• Fixed Film and Filtration Units
Subchapter H	• Natural Treatment Facilities
Subchapter J	• Sludge Treatment Units
Subchapter K	• Chemical Disinfection
Subchapter L	• UV Light Disinfection
Subchapter M	• Safety

Summary Transmittal Letter

Mr. Louis C. Herrin III, P.E.
TCEQ - MC 148
P. O. Box 13087
Austin, Texas 78711-3087

Re: Chapter 217.6 Summary Transmittal Letter

Permittee: (Insert the name of the permittee exactly as it is written on the wastewater discharge permit associated with the project identified in this letter.)
Permit Number: (Insert the Permit Number of the wastewater facility associated with the project identified in this letter. WQ00xxxxx00x)
Project Name: (Insert an identifying name for the project.)
County(s): (Insert the name of the county(s) in which the project will be located.)
Grant No.: (If applicable, insert the granting agency initials and a grant number)

Dear Mr. Herrin:

The purpose of this letter is to provide the Texas Commission on Environmental Quality (TCEQ) with the information necessary to comply with the requirements of 217.6(d) of the TCEQ's rules entitled "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS." The necessary information includes:

1. Provide the name and address of the engineering firm and TBPE firm number.
2. Provide the name, phone number, facsimile number, and email address of the design engineer.
3. Provide the county or counties where the project will be located.
4. Provide an identifying name for the project.
5. Provide the name of the entity (or entities) that proposes to own, operate, and maintain the project through its design life.
6. Provide a statement certifying that the plans and specifications are in substantial compliance with all the requirements of Chapter 217, with the exception of any variance requests, which must be listed in the letter.
7. Provide a statement certifying that any variances will not threaten public health or the environment, based on the best professional judgement of the engineer who prepared the engineering report and the project plans and specifications.
8. A brief description of the project scope including:
    a. A brief engineering summary of the collection system or wastewater treatment facility describing the purpose of the proposed project. At a minimum, for collection systems include design flow, pipe length, pipe diameter, pipe slopes,

Project Description

Short narrative of the project that include:

- Map of collection system or wastewater treatment facility
- Treatment units with units sizing
- The length and size of collection system
- General information on lift station
- Effluent limitations

Variances

- What is the technical justification for the variance requested

Common Variances

- Venting of Collection System
- Manhole Spacing
- Vacuum testing of Manholes
- Separation Distances (from water supply pipes)

Common Mistakes in the Summary Transmittal Letter

- Missing P.E. Seal
- Missing Wastewater Permit Number
- Missing Compliance Statement
- Missing or Poor Project Description
- Missing Firm Number

What Types of Projects Get Called-In (for Full Review)

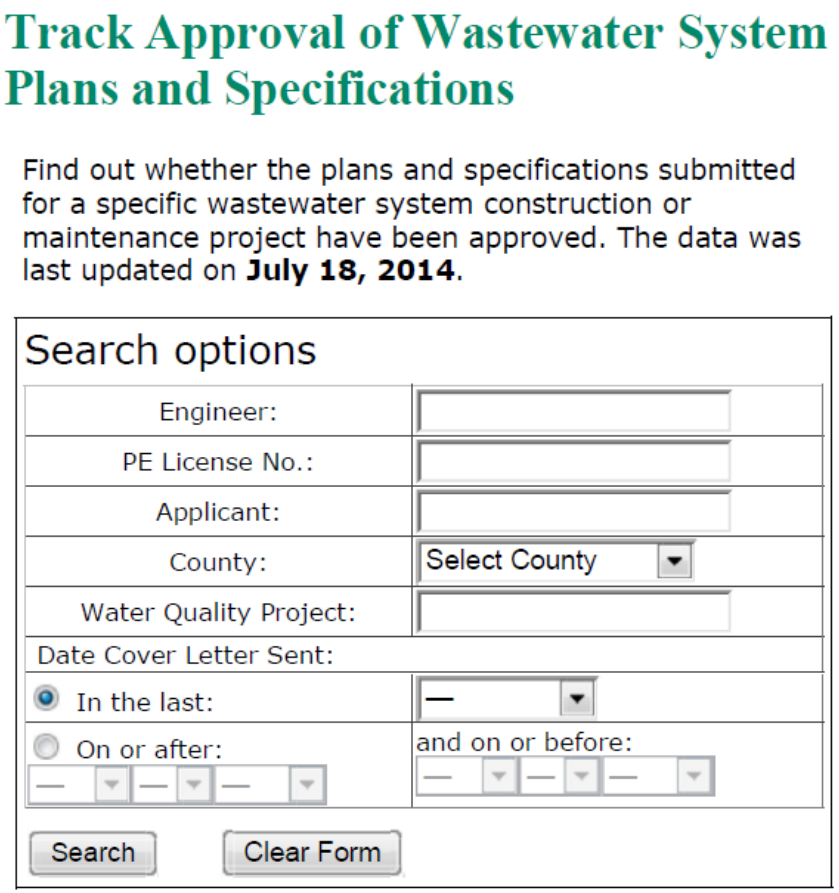
- Innovative or Nonconforming Technologies
- Vacuum or Pressure Sewer Systems
- Odor Control Systems
- Enforcement Actions
- Re-Ratings
- MBR, MBBR, IFAS

Check the Status of your Transmittal Letter

https://www18.tceq.texas.gov/wwps/

Search with

- Engineer Name
- PE License No.
- Applicant Name
- County Name



Track Approval of Wastewater System Plans and Specifications

Find out whether the plans and specifications submitted for a specific wastewater system construction or maintenance project have been approved. The data was last updated on **July 18, 2014**.

Search options

Engineer:	
PE License No.:	
Applicant:	
County:	Select County
Water Quality Project:	
Date Cover Letter Sent:	
In the last:	—
On or after: — — —	and on or before: — — —

Search | Clear Form

Chapter 217 Update

- What Initiated the Rule Update
- Proposed Changes to the Rule

What Initiated the Rule Update

- Chapter 217 is designed to be updated every 5 years
- Update 217 design criteria to include new technologies

Updating Administrative Requirements (Subchapter A)

- Update Definitions
- Update Submittal Requirements

Updating Wastewater Treatment Facility Design Requirements (Subchapter B)

- Update Design Organic Loadings and Design Flows
- Review and update Flow Measurement requirements
- Review and update Emergency Power requirements
  - Pumping (to prevent unauthorized discharges, to avoid septic conditions)
  - Aeration (partial or full)
  - Disinfection
  - Critical lighting and ventilation.

Collection System Updates (Subchapter C)

- Pipe Design updates
- Manhole Covers updates
- Testing Requirements for Gravity Collection Systems updates
- Review and Clarify Lift Station requirements
- New Reclaimed Water Distribution System requirements

Preliminary Treatment Units Updates (Subchapter E)

- Grit Removal Systems
  - Update Grit Chamber and Grit Handling requirements
  - New Grit Washing requirements
- Primary Clarifiers
  - Review and update **weir loading rate** requirements
  - Primary Sludge Degritting requirements

Activated Sludge Systems Updates (Subchapter F)

- Sequencing Batch Reactors (SBRs)
- Membrane Bioreactor Systems (MBRs)
- Advanced Nutrient Removal
- Aeration Basin and Clarifier Sizing – Volume-Flux Method

Sequencing Batch Reactor (SBR) Updates (Subchapter F)

- Sequencing Batch Reactors
  - Basin sizing updates
  - Aeration and Mixing Equipment updates
  - Control Systems Review and update

Membrane Bioreactor Systems (MBR) Updates (Subchapter F)

- Membrane Bioreactor (MBRs)
  - Wastewater Treatment Facility Design Review and updates
  - Membranes materials update
  - Membrane Design Parameters updates
    - Flux rates
    - Transmembrane Pressure (TMP)
    - Peak flow usage

Advanced Nutrient Removal Updates (Subchapter F)

- Need of Update
  - With more plants getting TP and TN requirements in their permits we have been asked to update the design requirements in Section 217.63 Advanced Nutrient Removal

Source: NTMWD Wastewater Treatment Facilities | NTMWD Photos & Videos

Advanced Nutrient Removal Updates

Proposed Changes

- Update Biological Nutrient Removal Design Criteria
  - Set Biological Phosphorus (P) Removal design requirements
  - Set Biological Nitrogen (N) Removal design requirements

- Update Phosphorus Removal by Chemical Precipitation Design Requirements

Aeration Basin and Clarifier Sizing-Volume-Flux Design Updates

Proposed Changes

- Review and Update Aeration Basin and Clarifier Sizing-Volume-Flux Design Method
  - Set Aeration Basin and Clarifier Sizing--Kinetics-Based Approach. Based on SRT calculation and activated sludge kinetic relationships.

Sludge Processing (Subchapter G)

- Anaerobic Digestion Updates
  - Anaerobic Digestion Pretreatment - Thermal Hydrolysis design requirements
- New Sludge Drying Section
  - Thermal Drying - Rotary Drum Dryers design requirements
- Other updates, as needed.

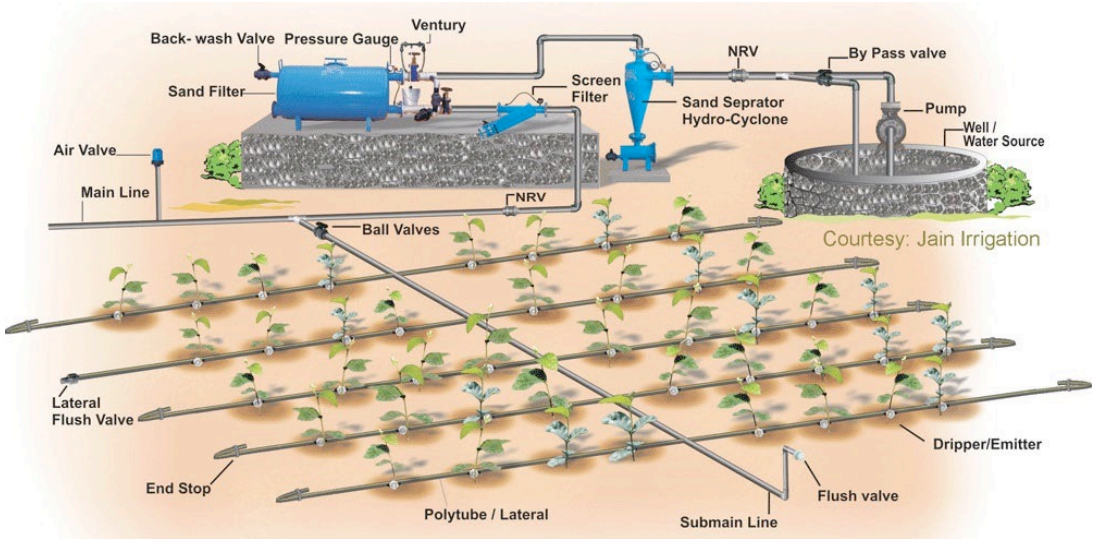
Dallas - TRA CRWS – Cambi (from www.cambi.com)

Natural Treatment Systems Updates (Subchapter H)

- Align Section of 217.203 to agree with 30 TAC 309.13(d)
  - For impoundments overlying recharge zones of **major** or **minor** aquifers
    - Require soil liner of **3 ft. thickness**
    - Require 10^{-7} permeability
    - minimum 40 mil thickness for synthetic liner
- Integrated Facultative Lagoons Update
- Other updates as needed.

Subsurface Drip Irrigation Systems (New Subchapter I)

- Moving Chapter 222 Subchapter D to the new Subchapter I.
- Adding treatment and disposal methods to this subchapter that are inline with both state and federal requirements
- Reviewing the existing design criteria for this subchapter to see if they need to be updated.



Updating Chemical Disinfection (Subchapter K)

- New Peracetic Acid (PAA) Disinfection design criteria

Updating Ultraviolet Light Disinfection (Subchapter L)

- Update UV Rules
- Review and update redundancy requirements
- Review and update dosage and sizing requirements
- Update UV light disinfection bioassay test procedures

Updating Safety Requirements (Subchapter M)

- Update Safety and Security Audits requirements
- Update Railing, Ladders, Walkways, and Stairways requirements

Stakeholder Teams Meeting on the Final Proposed Rule Revisions to 30 TAC 217 will be June 5, 2023

- The Stakeholder web site is:

https://www.tceq.texas.gov/permitting/wastewater/plans/design_criteria_stakeholder_group.html

- TCEQ Staff contact: 512/239-4671

Outreach@tceq.texas.gov

Questions

Contact Information

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Thank you!

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Wastewater Plans & Specs Review
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