

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AGENDA ITEM REQUEST
for Rulemaking Adoption

AGENDA REQUESTED: December 18, 2019

DATE OF REQUEST: November 26, 2019

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Kris Hogan, Rule/Agenda Coordinator, (512) 239-6812

CAPTION: Docket No. 2019-0399-RUL. Consideration of the adoption of amended Sections 222.1, 222.3, 222.5, 222.31, 222.33, 222.73, 222.75, 222.81, 222.83, 222.85, 222.87, 222.115, 222.119, 222.127, 222.157, 222.159, and 222.163 of 30 TAC Chapter 222, Subsurface Area Drip Dispersal Systems; and amended Sections 309.1 - 309.4, 309.10 - 309.14, and 309.20 and new Sections 309.21 - 309.25 of 30 TAC Chapter 309, Domestic Wastewater Effluent Limitation and Plant Siting.

The adoption would allow an applicant for a Texas Land Application Permit the option to reduce the acreage required for land application of treated domestic wastewater by obtaining a "beneficial reuse credit" that accounts for offsite beneficial reuse. The adopted rulemaking would also include administrative changes to ensure current and accurate cross-references, improve readability, improve rule structure, and use consistent and industry accepted terminology. The proposed rules were published in the June 28, 2019, issue of the *Texas Register* (44 TexReg 3227). (Rebecca Moore, Michael Parr) (Rule Project No. 2016-042-309-OW)

L'Oreal W. Stepney, P.E.

Deputy Director

David W. Galindo

Division Director

Kristina M. Hogan

Agenda Coordinator

Copy to CCC Secretary? NO X YES

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** November 26, 2019

Thru: Bridget C. Bohac, Chief Clerk
Toby Baker, Executive Director

From: L'Oreal W. Stepney, P.E., Deputy Director
Office of Water

Docket No.: 2019-0399-RUL

Subject: Commission Approval for Rulemaking Adoption
Chapter 222, Subsurface Area Drip Dispersal Systems
Chapter 309, Domestic Wastewater Effluent Limitation and Plant Siting
Amendment of Chapters 222 and 309 Relating to Beneficial Reuse Credits
Rule Project No. 2016-042-309-OW

Background and reason(s) for the rulemaking:

On March 14, 2016, the Texas Commission on Environmental Quality (commission) received a petition from the City of Austin (petitioner). The commission considered the petition on May 11, 2016, and decided to initiate rulemaking concerning the issues raised in the petition. The petition was made in response to increasing demands on water supplies and decreasing availability of contiguous or neighboring tracts of land that are large enough for domestic wastewater disposal under the commission's current rules. This trend is currently appearing in parts of Central Texas where wastewater discharge to water in the state is restricted by 30 TAC Chapter 213, Edwards Aquifer, and 30 TAC Chapter 311, Watershed Protection.

Scope of the rulemaking:

A.) Summary of what the rulemaking would do:

The adopted rulemaking in Chapters 222 and 309 would give an applicant for a Texas Land Application Permit (TLAP) the option to reduce the acreage required for land application of treated domestic wastewater by obtaining a "beneficial reuse credit" that accounts for beneficial reuse (i.e., water that will not go to the applicant's permitted irrigation site). The adopted rulemaking is not compulsory—the rules would only apply if an applicant chooses to seek a beneficial reuse credit. The adopted rulemaking would establish requirements for obtaining and maintaining a beneficial reuse credit. The beneficial reuse credit would be based on the firm reclaimed water demand demonstrated by water use data from the applicant's reclaimed water users. An applicant could also use a beneficial reuse credit to increase the permitted flow without changing the disposal acreage or to change both the disposal acreage and the permitted flow.

B.) Scope required by federal regulations or state statutes:

None.

C.) Additional staff recommendations that are not required by federal rule or state statute:

All revisions are either in response to the petition or reflect staff recommendations. Staff recommendations include administrative changes to ensure current and accurate cross-

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references, improve readability, improve rule structure, and use consistent and industry accepted terminology.

Statutory authority:

- Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission;
- TWC, §5.102, which provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority;
- TWC, §5.103, which authorizes the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state;
- TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC;
- TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state;
- TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier;
- TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state;
- TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state;
- TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state;
- TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes;
- TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and
- TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

Effect on the:

A.) Regulated community:

The regulated community impacted by the adopted rulemaking is limited to permit holders of TLAPs that opt to apply for a beneficial reuse credit. The regulated community that opts to apply for a beneficial reuse credit is likely to experience cost savings by reducing the required acreage for land disposal.

B.) Public:

The adopted rulemaking is not expected to have a significant effect on the public.

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C.) Agency programs:

The adopted rulemaking is expected to increase application review times, frequency of review, and time spent on enforcement for a very small subset of water quality permits. For example, permitting staff of the Water Quality Division would need additional time to validate a proposed credit using the applicant's data and the Office of Compliance and Enforcement may spend additional time on compliance data and report reviews, discharge monitoring report generation, and enforcement for a small number of permits. Additionally, this very small subset of permits would be issued for a maximum term of five years, instead of ten years like other TLAPs. The adopted rulemaking is not expected to significantly affect the agency's ability to meet designated performance measures.

Stakeholder meetings:

The petitioner drafted the petition with input from a diverse group of regional representatives of state lawmakers and governmental agencies located in Central Texas, wastewater treatment professionals, and environmental advocacy organizations. The executive director held a stakeholder meeting on August 9, 2016, and the public was invited to comment on the rulemaking petition. The public comment period was from August 28, 2016 through October 28, 2016. Comments received were in favor of the rulemaking petition.

Public comment:

The commission held a public hearing in Austin on July 25, 2019. The comment period closed on July 30, 2019. The commission received two oral comments at the hearing, and written comment letters from one state representative, 14 companies or governmental entities, and over 640 individuals. One commenter was in support of the rulemaking and the rest of the commenters were in support of the rulemaking, but suggested changes.

Suggested changes include: allowing the reduction of the required storage based on beneficial reuse; allowing off-site storage at the user's site to count toward the storage requirement; requiring more stringent limits for permittees that have been granted a beneficial reuse credit than the proposed rule required, including adding nutrient limitations; adding buffer zone requirements to beneficial reuse sites that are used to demonstrate firm reclaimed water demand; requiring monitoring of surface water downstream of beneficial reuse areas; allowing a more flexible method of determining firm reclaimed water demand; allowing a 1:1 credit for proved reuse; and classifying an application for a beneficial reuse credit as a minor amendment.

Significant changes from proposal:

Section 309.25(c)(6) has been added to the rulemaking to state that the executive director may require additional limitations or more frequent testing on a case-by-case basis. The executive director may increase monitoring frequency or add a limit based on the results submitted annually and with the application.

The prohibition of prospective or speculative reclaimed water use to demonstrate firm reclaimed water demand in proposed §309.23(h) was changed. Revised §309.23(h) now

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allows less than two years of data to demonstrate firm reclaimed water demand at the discretion of the executive director.

Potential controversial concerns and legislative interest:

Some legislators have shown interest in the rulemaking. The commissioners recommended a cautious approach during the commission's consideration of the petition.

Does this rulemaking affect any current policies or require development of new policies?

This rulemaking would require the development of new policies to implement the evaluation of beneficial reuse credit applications and the monitoring of facilities with approved beneficial reuse credits.

What are the consequences if this rulemaking does not go forward? Are there alternatives to rulemaking?

This rulemaking would encourage beneficial reuse and create land-use flexibility by allowing TLAP holders to reduce their land disposal site. Without this rulemaking, the land constraint for TLAP holders in Central Texas will continue.

Key points in the adoption rulemaking schedule:

***Texas Register* proposal publication date:** June 28, 2019

Anticipated *Texas Register* adoption publication date: January 10, 2020

Anticipated effective date: January 9, 2020

Six-month *Texas Register* filing deadline: December 30, 2019

Agency contacts:

Rebecca Moore, Rule Project Manager, Water Quality Division, (512) 239-0058

Michael Parr, Staff Attorney, (512) 239-0611

Kris Hogan, Texas Register Rule/Agenda Coordinator, (512) 239-6812

Attachments:

Petition

Petition's Order

cc: Chief Clerk, 2 copies
Executive Director's Office
Jim Rizk
Barbara Robinson
Brody Burks
Office of General Counsel
Rebecca Moore
Kris Hogan



City of Austin

Law Department

City Hall, 301 West 2nd Street, P.O. Box 1546
Austin, Texas 78767-1546
(512) 974-2268

Writer's Direct Line
512-974-2173

Writer's Fax Line
512-974-6490

March 14, 2016

Mr. Richard A. Hyde, P.E.
Executive Director
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: City of Austin Petition for Rulemaking

Dear Mr. Hyde,

Please find enclosed one original and seven copies of a Petition for Rulemaking (the "Petition") filed on behalf of the City of Austin (the "City") seeking to initiate rulemaking related to beneficial reuse of treated effluent. In addition to the Petition and its exhibits, please find enclosed a resolution of support for this Petition from the Barton Springs Edwards Aquifer Conservation District.

We respectfully request that this Petition be set for consideration and Commission action. We look forward to working with all concerned on this matter.

Please feel free to contact me at 512-974-2173 or Chris Herrington at 512-974-2840 if you have any questions or need any additional information.

Sincerely,

Patricia (Trish) L. Link
Assistant City Attorney

PETITION FOR RULEMAKING §
§
BY THE CITY OF AUSTIN, TEXAS § **BEFORE THE TEXAS COMMISSION**
§ **ON ENVIRONMENTAL QUALITY**
CONCERNING WASTEWATER §
PERMITS AND BENEFICIAL §
REUSE OF WATER §

ORIGINAL PETITION FOR RULEMAKING

TO THE HONORABLE COMMISSIONERS:

The City of Austin (“City”) respectfully requests the Texas Commission on Environmental Quality (“TCEQ” or “Commission”) initiate rulemaking to adopt new rules under 30 Texas Administrative Code Chapters 222 and 309 concerning the beneficial reuse of treated effluent. The City submits this petition, by and through its City Attorney, pursuant to Texas Government Code §2001.021 and Rule 30 Texas Administrative Code Section 20.15 and respectfully shows the following:

INTRODUCTION

Texas’ water supply needs are steadily increasing. In order to sustain its existing population in times of drought, the 2012 State Water Plan (“Water Plan”) estimates that Texas needs 3.6 million of acre-feet of water per year. *See* pg. 174 (Quick Facts). In 2060, the Water Plan estimates the need will increase an additional 8.3 million acre-feet of water per year. *See* pg. 176 (Table 6.1). The Water Plan warns that an inability to meet water supply needs in 2060 could generate annual economic losses of \$115.7 billion and the loss of more than a million jobs. *See* pg. 183. To address Texas’ increasing water supply needs, Texas needs to find alternative water supplies or to reduce demand on potable water. This petition provides an opportunity for

the Commission to adopt rules that will incentivize wastewater permittees and applicants to reuse treated wastewater, which can help Texas address its future water needs.

PETITIONER INFORMATION

The City, Petitioner, is a home-rule municipality located in Travis, Hays, and Williamson Counties. For purposes of this Petition, contact with the City can be made by directing correspondence to the following:

City of Austin
City of Austin Law Department
ATTN: Patricia L. Link
P. O. Box 1088
Austin, Texas 78767-1088
patricia.link@austintexas.gov
512-974-2173
512-974-6490 (facsimile)

City of Austin
City of Austin Watershed Department
ATTN: Chris Herrington, P.E.
P.O. Box 1088
Austin, Texas 78767-1088
chris.herrington@austintexas.gov
512-974-2840
512-974-2846 (facsimile)

Petitioner drafted the proposed rules with input from a diverse group of regional stakeholders, including representatives of State lawmakers and governmental agencies located in central Texas, wastewater treatment professionals, and environmental advocacy organizations. This Petition is supported by the Austin City Council. See Exhibit “A”, attached and incorporated by reference.

STATEMENT OF COMMISSION’S AUTHORITY

Texas Water Code Sections 5.102 and 5.103 authorize the Commission to adopt rules as necessary to carry out its powers and duties, which includes administration and implementation of the State’s water quality program. Consistent with its authority, the Commission regulates and issues permits related to discharge of pollutants into or adjacent to waters of the State. *See Texas*

Water Code Section 26.027; 30 T.A.C. Chapters 222 and 310. The proposed rules are consistent with this authority.

The Commission is required by Section 11.1271 of the Texas Water Code to adopt rules that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency. Conservation includes practices, techniques, and technologies that make water use more efficient. Tex. Water Code §11.002(8). Pursuant to this responsibility, the Commission also authorizes the beneficial reuse of reclaimed water. 30 T.A.C. 210. The proposed rules are consistent with this authority.

EXPLANATION OF PROPOSED RULES

This Petition proposes rules that will amend 30 Tex. Admin. Code Chapters 222 and 309, which concern subsurface irrigation and land application of treated wastewater. The amendments will allow permittees and applicants to rely on the beneficial reuse of treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the size of effluent storage and the amount of land required for disposal of treated wastewater.

Specifically, an applicant or permittee would rely on “firm reclaimed water demand” to dispose of a portion of its total volume of treated wastewater.¹ “Firm reclaimed water demand” will be the minimum volume of reclaimed water that can be guaranteed to be beneficially reused over a specified period of time and includes reclaimed water utilized for indoor and outdoor purposes. The proposed rules allow a permittee or applicant to demonstrate firm reclaimed water demand through contracts for the reclaimed water, the applicant’s or permittee’s historical use of reclaimed water, or appropriate regulations that obligate the use of reclaimed water. An applicant or permittee will be required to provide the Executive Director with information that identifies

¹ To show the application of the proposed rules, the City’s Watershed Protection Department created a hypothetical water balance, which is attached and incorporated by reference as Exhibit “B”.

water users, types of use, and locations of use. Prior to construction or operation of the wastewater facility, the applicant or permittee will be required to obtain a beneficial reuse authorization, as described in 30 Texas Admin. Code Chapter 210.

The proposed rules do not modify the standards for the treatment of wastewater or otherwise modify water quality standards set by the Commission. Moreover, the proposed rules do not modify the requirements in 30 Tex. Admin. Code Chapter 210. Lastly, the proposed rules do not preclude an existing or new permittee from seeking a permit to discharge treated wastewater effluent.

The proposed rules are attached as Exhibits “C-1” and “C-2”; and are incorporated by reference. The proposed rules will amend existing sections of 30 Texas Admin. Code Chapters 222 and 309, and add new sections, subsections, and subparagraphs as described in the charts below.

CHAPTER 222	ACTION
30 TAC §222.5 (<i>Definitions</i>)	Defines “firm reclaimed water demand.”
30 TAC §222.6 (<i>Firm Reclaimed Water Demand</i>)	Adds a new section to Chapter.
30 TAC §222.43 (<i>Construction Notices to Regional Offices</i>)	Adds a new subsection.
30 TAC §222.75 (<i>Site Preparation Plan</i>)	Adds a new subsection.
30 TAC §222.121 (<i>Dispersal Zones</i>)	Adds a new subsection.
30 TAC §222.128 (<i>Reclaimed Water Dispersal Sites</i>)	Adds a new section to Chapter.
30 TAC §222.157 (<i>Soil Sampling</i>)	Adds a new subsection.

CHAPTER 309	ACTION
30 TAC §309.11 (<i>Definitions</i>)	Defines “firm reclaimed water demand.”
30 TAC §309.20(a)(1) (<i>Technical Report. Location</i>)	Adds a new subparagraph.
30 TAC §309.20(b)(3)(A) (<i>Hydraulic Application Rate</i>)	Amends and adds a new subsection.
30 TAC §309.20(b)(3)(B) (<i>Effluent Storage</i>)	Amends subparagraph.
30 TAC §309.21 (<i>Firm Reclaimed Water Demand</i>)	Adds a new section.
30 TAC §309.22 (<i>Reclaimed Water Dispersal Sites</i>)	Adds a new section.

PUBLIC POLICY BENEFITS OF PROPOSED RULES

The proposed rules align with the Commission's mission statement and guiding principles. The proposed rules protect natural resources consistent with sustainable economic development because the rules provide a method that will encourage conservation of raw water resources. The proposed rules also provide an alternative to direct discharge of wastewater that is not cost-prohibitive and allows flexibility for applicants and permittees without endangering environmental goals. Lastly, the proposed rules will have the effect of conforming the Commission's regulations to existing industry practices.

INJURY OR INEQUITY FOR FAILURE TO ADOPT THE PROPOSED RULES

Failure to adopt the proposed rules will continue an unsustainable practice of 100% redundancy with dedicated disposal fields and storage when wastewater applicants and permittees also utilize a beneficial reuse authorization. Current regulations that require an applicant to acquire or rely on disposal fields and storage create unnecessary burdens for applicants that seek to maximize beneficial reuse and unnecessarily increases costs for land application of treated wastewater. Moreover, existing practice acts as a disincentive to reuse precious and limited raw water supplies, which may have a catastrophic impact on the economic well-being of the State.

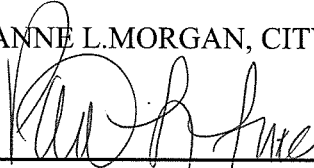
CONCLUSION

The Commission has the authority to adopt the proposed rules, which are consistent with state law, existing regulations, and industry practice. Because the proposed rules are designed to incentivize beneficial reuse of treated wastewater, the proposed rules are consistent with and implement a strategy the State has already determined is important to sustaining the State.

Accordingly, the City respectfully requests the Commission initiate rulemaking that is consistent with the rules proposed in this Petition.

RESPECTFULLY SUBMITTED,

ANNE L. MORGAN, CITY ATTORNEY



PATRICIA L. LINK

SBN 24041343

Assistant City Attorney

patricia.link@austintexas.gov

City of Austin Law Department

P.O. Box 1546

Austin, Texas 78767-1546

Telephone: (512) 974-2173

Facsimile: (512) 974-1311

ATTORNEYS FOR CITY OF AUSTIN

RESOLUTION NO. 20151217-054

WHEREAS, the stated mission of the Texas Commission on Environmental Quality (TCEQ) is to protect our state's public health and natural resources consistent with sustainable economic development; and

WHEREAS, the TCEQ is the regulatory agency that permits the land disposal of treated wastewater in Chapters 222 and 309 of Title 30 of the Texas Administrative Code and authorizes the beneficial reuse of treated wastewater in Chapter 210 of Title 30 of the Texas Administrative Code; and

WHEREAS, the purpose of beneficial reuse is to allow utilization of reclaimed wastewater for conservation of surface and ground water, and to ensure an adequate supply of water resources for present and future needs; and

WHEREAS, Central Texas is experiencing rapid population growth that exerts increasing demands on limited surface and ground water supplies; and

WHEREAS, many wastewater treatment facilities permitted for land application also utilize beneficial reuse of reclaimed wastewater in an effort to conserve water supplies, which results in only partial utilization of dedicated land disposal fields; and

WHEREAS, the Watershed Protection Department, in conjunction with other Central Texas governmental agencies and wastewater treatment professionals ("Stakeholders"), developed a draft rule to encourage beneficial reuse of treated wastewater; **NOW, THEREFORE**,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

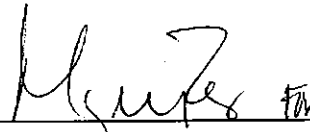
The City Council supports beneficial reuse of treated wastewater and the work of the Stakeholders.

BE IT FURTHER RESOLVED:

The City Council requests TCEQ initiate rulemaking consistent with the draft rule, developed by the Stakeholders, to modify land application of wastewater requirements to authorize reductions in disposal field size and effluent storage requirements when the permit holder utilizes beneficial reuse of treated wastewater.

ADOPTED: December 17, 2015

ATTEST:



Jannette S. Goodall
City Clerk

Exhibit B. Example application of proposed rule to a new land application permit

Introduction

The following is a hypothetical example intended to illustrate the intended application of the proposed rule to a new land application facility intending to treat 500,000 gallons per day (gpd) in the final phase with effluent disposal via surface irrigation. The scenario compares the potential impact on required effluent disposal area and effluent storage with and without the proposed rule.

Development Scenario-Wastewater Generation

The applicant proposes to provide wastewater service to 3 phases of a subdivision, with 500 LUE per phase (Table 1). The applicant assumes 245 gpd of wastewater per living unit equivalent (LUE), equivalent to 70 gallons per person per day and 3.5 people per LUE.

The facility must provide 367,500 gpd of treatment capacity. The applicant assumes that some infill densification may occur after initial build-out, and thus assumes an additional 132,500 gpd of wastewater as a safety factor to account for future development such that the total design average daily flow of the wastewater treatment facility is 500,000 gpd.

Table 1. Summary of wastewater to be treated by the proposed wastewater treatment facility (assumes 245 gallons of wastewater per LUE per day).

Subdivision Phase	Planned # LUE per phase	Total Wastewater Volume (gpd)
A	500	122,500
B	500	122,500
C	500	122,500
Additional future growth	n/a	132,500
		500,000

Development Scenario Demonstrating Reclaimed Water Demand

The applicant intends to seek a beneficial reuse authorization under 30 TAC 210 after receiving a wastewater effluent land application permit. The applicant has an agreement to provide reclaimed water for outdoor irrigation of an adjacent golf course. The adjacent golf course is not owned by the applicant, and the applicant does not wish to incorporate the golf course as a co-permittee for the wastewater disposal permit.

The golf course has been in operation for 5 years and has established a record of average and minimum monthly irrigation water demands (Table 2). The applicant provides legal documentation demonstrating that the golf course is obligated to accept at least the minimum monthly amount recorded over the past 5 year period (75,000 gallons per month or 2,420 gpd). The applicant has also provided a separate water balance demonstrating that the golf course is properly irrigating such that no unauthorized or over-saturated conditions occur. As required by the proposed rule, the volume of firm reclaimed water demand for outdoor irrigation purposes must be reduced by 20%.

Table 2. Irrigation Water Demands (in gallons) over a 5-year period for Adjacent Golf Course. Values were estimated from a City of Austin municipal golf-course irrigated with reclaimed water.

Month	Average	Minimum
Jan	6,287,400	186,500
Feb	2,824,000	119,500
Mar	4,581,300	75,000
Apr	8,356,100	1,891,500
May	13,570,800	1,830,500
Jun	11,641,500	1,135,000
Jul	18,521,600	8,921,500
Aug	23,399,800	18,639,000
Sep	12,823,650	6,101,500
Oct	14,630,230	5,347,000
Nov	8,793,120	465,500
Dec	6,102,750	4,330,500

The applicant also intends to provide reclaimed water for certain indoor uses to the various phases of the subdivision (Table 3). The subdivision is new construction and thus able to install dual water supply plumbing systems in the new residential homes. Disaggregated water demand studies from an adjacent municipality are utilized by the applicant to develop reclaimed water demand estimates.

Based on local studies, the applicant estimates 700 gallons per residential LUE per day of potable water demand. Toilet flushing is estimated to account on average for 18.4% of total residential potable water demand. Clothes washing is estimated to account on average for 17.9% of total residential potable water demand.

The applicant provides legal documentation showing that the planned phases of the subdivision will be required by contract to utilize the reclaimed water demand for the purposes listed (Table 3).

Table 3. Reclaimed water demand by indoor use type for planned phases of the subdivision. Values estimated from preliminary citywide disaggregated demand modeling by City of Austin.

Subdivision Phase	Indoor Reclaimed Water Use Type	Daily Reclaimed Water Demand (gpd)*
A	None	0
B	Toilet flushing	64,400
C	Toilet flushing	64,400
	Clothes washing	62,650
		191,450

*(gallons of potable water demand per LUE per day) * (% potable demand by use) * (# LUE)

Wastewater Treatment Facility Design Under Current Rule

The wastewater effluent hydraulic application rate and storage requirements were determined using current regulations following the methods outlined in 30 TAC 309.20(b)(3). Monthly values are shown, but the water balance was conducted on a daily time step using 2004 as the wettest year. Additional values for variables utilized in the water balance include:

CN = 84
 S = 1.905 in
 K = 0.85
 Ce = 1.5
 Cl = 10

The total final phase flow of 500,000 gpd of wastewater was proposed by the applicant to be irrigated by surface irrigation on 163 acres (Table 4) with a storage pond volume of 99 ac-ft and storage pond surface area of 6 ac (Table 5). Dividing the design flow (500,000 gpd) by the accumulated volume of effluent to be land applied (Column 10 of Table 4) and adjusting for unit conversion demonstrates a need for approximately 162.2 acres for effluent disposal, less than the 163 acres proposed by the applicant.

Over the annual analysis, the maximum accumulated storage volume on any individual day was determined to be 7.16 in/irrigated acre. Multiplying by the acreage irrigated and adjusting for unit conversion demonstrates a need for approximately 97.2 ac-ft of storage, less than the 99 ac-ft of storage proposed by the applicant.

Table 4. Water balance under existing regulations (all units are inches per acre irrigated).

Month	Avg. Precip.	Avg. Runoff	Avg. Infiltrated Rainfall (2)-(3)	Evapo-transp.	Required Leaching	Total Water Needs (5)+(6)	Effluent Needed in Root Zone (7)-(4)	Reservoir Surface Evaporation	Effluent to be Applied to Land (8)/K	Consump. from Reservoir (9)+(10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Jan	2.07	0.185	1.885	2.56	0.39	2.95	2.62	0.09	2.17	2.26
Feb	2.18	0.016	2.164	3.15	0.41	3.56	2.73	0.11	1.86	1.98
Mar	2.38	0.156	2.224	4.42	0.63	5.05	4.20	0.16	3.70	3.86
Apr	2.02	0.009	2.011	4.97	0.66	5.63	4.40	0.18	3.44	3.62
May	4.70	0.958	3.742	5.6	0.80	6.40	5.32	0.20	3.81	4.01
Jun	4.51	0.348	4.162	6.77	0.82	7.59	5.47	0.24	4.25	4.49
Jul	1.66	0.167	1.493	7.46	1.23	8.69	8.18	0.26	5.63	5.90
Aug	2.56	0.251	2.309	6.99	1.05	8.04	6.97	0.25	5.70	5.95
Sep	2.68	0.821	1.859	5.41	0.86	6.27	5.70	0.19	4.71	4.90
Oct	4.07	1.057	3.013	4.42	0.62	5.04	4.14	0.16	2.95	3.11
Nov	3.41	0.431	2.979	3.15	0.38	3.53	2.56	0.11	1.60	1.71
Dec	2.58	0.698	1.882	2.56	0.41	2.97	2.72	0.09	1.60	1.69
Total	34.82	5.098	29.722	57.46	8.25	65.71	55.01	2.03	41.45	43.48

Table 5. Storage volume requirement calculations under current regulations.

Month	Effluent Recvd for Application or Storage	Rainfall Worst Year in Past 25 Years	Runoff Worst Year in Past 25 Years	Infiltrated Rainfall (14)-(15)	Available Water (13)+(16)	Net 25 Year Low Evaporation from Reserv. Surf.	Storage	Accumulated Storage	Maximum Daily Accumulated Storage
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
Jan	3.49	2.56	0.34	2.22	5.71	0.06	2.64	5.26	5.05
Feb	3.27	5.38	0.72	4.66	7.93	0.06	3.27	6.72	6.45
Mar	3.49	1.96	0.08	1.88	5.37	0.11	-0.28	6.46	7.16
Apr	3.38	2.89	0.06	2.83	6.20	0.13	0.01	6.44	6.66
May	3.49	2.44	0.17	2.27	5.77	0.14	-1.43	5.97	6.71
Jun	3.38	14.18	4.85	9.33	12.71	0.18	3.26	5.59	6.66
Jul	3.49	3.20	0.93	2.27	5.77	0.22	-4.21	3.32	5.92
Aug	3.49	1.25	0.01	1.24	4.73	0.22	-4.65	1.29	2.54
Sep	3.38	1.17	0.12	1.05	4.43	0.17	-2.86	0.00	1.42
Oct	3.49	6.76	2.67	4.09	7.59	0.13	2.31	0.25	0.93
Nov	3.38	9.91	3.53	6.38	9.76	0.09	3.35	2.01	1.93
Dec	3.49	0.20	0.00	0.20	3.69	0.06	0.24	3.91	3.79

Total 41.23 51.90 13.47 38.43 79.66 1.57

Wastewater Treatment Facility Design Under Proposed Rule

The wastewater effluent hydraulic application rate and storage requirement calculations were repeated using the methodology of the proposed rule. The total volume of wastewater effluent was reduced by the firm reclaimed water demand prior to populating the hydraulic application rate and storage calculation tables.

Firm reclaimed water demand is the minimum monthly amount of outdoor irrigation on the golf course (75,000 gallons per month or 2,420 gpd less 20% as shown in Table 2), plus the total amount of reclaimed water that is to be utilized indoors (191,400 gallons per day as shown in Table 3). Thus, the total volume of wastewater effluent used in the revised hydraulic application rate and storage calculations is reduced to 306,664 gpd. With the credit for firm reclaimed water demand, the applicant now proposes to irrigate 100 acres and provide 60 ac-ft of storage with a surface area of 3.5 ac.

Dividing the reduced design flow (306,664 gpd) by the accumulated volume of effluent to be land applied (Column 10 of Table 4) and adjusting for unit conversion demonstrates a need for approximately 99.46 acres for effluent disposal, or less than the 100 acres proposed by the applicant. Multiplying the maximum daily accumulated storage (Table 5) by the acreage irrigated and adjusting for unit conversion demonstrates a need for approximately 59.7 ac-ft of storage, or less than the 60 ac-ft proposed by the applicant.

Conclusion

By taking advantage of firm reclaimed water demand, the applicant is able to reduce the required area for dedicated effluent disposal and the required effluent storage volumes by approximately 39% (Table 6) which would not have been possible under current regulations which require 100% redundancy for all reclaimed water use. This reduction would potentially be a substantial cost savings by avoiding costs associated with more land acquisition, installation of more effluent irrigation infrastructure, and construction of a larger effluent storage facility. Because the reclaimed water demand is firm as established by engineering analysis and supported by legal obligations, there is minimal risk of an unauthorized discharge. Additionally, the applicant is effectively requiring the conservation of more than 193,336 gpd of potable water.

Table 6. Summary of Effluent Disposal Field Size and Storage Requirements under Current and Proposed Regulations.

Scenario	Required Effluent Disposal Area (ac)	Required Effluent Storage (ac-ft)
Current regulation, no reduction for firm reclaimed water demand	163	99
Proposed regulations, with reduction for firm reclaimed water demand	100	60

PROPOSED RULE CHANGES 30 T.A.C CHAPTER 222

30 TAC §222.5 Definitions.

Firm reclaimed water demand means the minimum volume of reclaimed water that can be guaranteed to be beneficially reused over a specified time and includes reclaimed water used for indoor and outdoor purposes.

30 TAC §222.6 Firm Reclaimed Water Demand.

- (a) An applicant establishes that reclaimed water demand is firm when the applicant:
 - (1) demonstrates to the satisfaction of the executive director that it is able to transfer a specific volume of reclaimed water on a periodic basis; or
 - (2) demonstrates a specific amount of reclaimed water use by the applicant.
- (b) An applicant may demonstrate its ability to transfer reclaimed water on a periodic basis when it requires a user to accept a specific amount of reclaimed water by contract or by appropriate regulation.
- (c) Applicant must provide the executive director with a list of users, type of use, and areas that receive firm reclaimed water demand. Areas receiving firm reclaimed water demand for outdoor irrigation purposes must be shown on a map that identifies the buffer zones in compliance with 30 TAC 222.81 (*Buffer Zone Requirements*). If the users or areas change, the applicant is required to provide an updated list within 30 days. A change in user or area is not an amendment to the permit.
- (d) Firm reclaimed water demand include the uses described in 30 TAC §210.32 (*Specific Uses of Reclaimed Water*).
- (e) Reclaimed water dispersal sites must meet the standards in 30 TAC §222.128 (*Reclaimed Water Dispersal Sites*).
- (f) An applicant cannot rely on a transfer of reclaimed water to a user if the user has been found substantially noncompliant, as described in 30 TAC §70.51 (*Mandatory Enforcement Hearings*), within the last five years.
- (g) Applicant is responsible for recording the volume of firm reclaimed water demand that is transferred.
- (h) An applicant that relies on firm reclaimed water demand that will be used for outdoor purposes must demonstrate in the water balance that the firm reclaimed water will not result in an unauthorized discharge to waters of the State or a contamination of groundwater.
- (i) An applicant and, to the extent applicable, user must maintain its authorization under 30 TAC Chapter 210 (*Use of Reclaimed Water*) during the term of the permit.
- (j) A permittee that relies on firm reclaimed water demand must receive an authorization required by 30 TAC Chapter 210 (*Use of Reclaimed Water*) prior to initiating construction or, if already constructed, operating a subsurface area drip dispersal system.
- (k) In any phase of a permit, the volume of firm reclaimed water demand an applicant relies upon must be less than the total permitted volume of wastewater.

30 TAC §222.43 Construction Notices to Regional Offices.

- (e) The addition or modification of users or areas for firm reclaimed water demand does not constitute field layout or construction under this Section.

PROPOSED RULE CHANGES 30 T.A.C CHAPTER 222

30 TAC §222.75 Site Preparation Plan.

- (a) The applicant shall develop and submit, with the permit application, a site preparation plan that illustrates how site preparation will alleviate potential site-specific limitations and ensure suitability for the subsurface area drip dispersal system of wastewater. This plan must include the following if applicable:
- (b) A site preparation plan is not necessary for reclaimed water dispersal sites.

30 TAC §222.121 Dispersal Zones.

- (d) The permittee shall include the dispersal zone design in the engineering report, including the following elements:
 - (10) the total volume of firm reclaimed water demand less 20% if the reclaimed water will be land applied, unless the permittee, during the first term of the permit, owns, leases, or otherwise reserves land to apply the total volume of effluent less the volume of firm reclaimed water demand utilized for indoor uses.

30 TAC §222.128. Reclaimed Water Dispersal Sites.

- (a) An applicant that relies upon firm reclaimed water demand to reduce the land required for the subsurface area dispersal system required under this Chapter, shall ensure that indoor and outdoor dispersal sites for the reclaimed water have the appropriate authorization under 30 TAC Chapter 210 (*Use of Reclaimed Water*).
- (b) Outdoor reclaimed water dispersal sites described in subsection (a) must meet the distance standards set in 30 TAC §222.81 (*Buffer Zone Requirements*).

30 TAC §222.157 Soil Sampling.

- (j) The requirements in this section do not apply to a reclaimed water dispersal site described in 30 TAC §222.128 (*Reclaimed Water Dispersal Sites*).

PROPOSED RULE CHANGES TO 30 T.A.C. CHAPTER 309

30 TAC §309.11 Definitions.

Firm reclaimed water demand means the minimum volume of reclaimed water that can be guaranteed to be beneficially reused over a specified time and includes reclaimed water used for indoor and outdoor purposes.

30 TAC §309.20(a)(1) Technical Report. Location.

- (A) Site map. A copy of the United States Geological Survey topographic map of the area which indicates the exact boundaries of the disposal operation will be included in the technical report. A map from the 7 ½ minute series is required if it is published for the site area.
- (B) Site drawing. A scale drawing and legal description of all land which is to be a part of the disposal operation will be included in the technical report. The drawing will show the location of all existing and proposed facilities to include: buildings, waste disposal or treatment facilities, effluent storage and tail water control facilities, buffer zones, and water wells. This drawing should have an index tracts adjacent to be irrigated land shall be shown on the site drawing and identified by listing legal ownership.
- (C) For purposes of this subparagraph, the disposal operation does not include the land utilized for firm reclaimed water demand.

30 TAC §309.20(b)(3)(A) Hydraulic application rate.

- (1) A water balance study shall be provided as part of a detailed application rate analysis in order to determine the irrigation water requirement, including a leaching requirement if needed, for the crop system on the wastewater application areas. Except as otherwise provided in Subsection (2), the total volume of effluent to be land applied to dedicated disposal fields may be reduced by a maximum of 80% of the total volume of firm reclaimed water demand that will be used for outdoor purposes and the total volume of firm reclaimed water demand utilized for indoor purposes. The water balance study should generally follow the example development shown in Table 1 of this subparagraph. Precipitation inputs to the water balance shall utilize the average yearly rainfall and the monthly precipitation distribution based on past rainfall records. The consumptive use requirements (evapotranspiration losses) of the crop system shall be developed on a monthly basis. The method of determining the consumptive use requirement shall be documented as a part of the water balance study. A leaching requirement, calculated as shown in Table 1 of this subparagraph, shall be included in the water balance study when the total dissolved solids concentration of the effluent presents the potential for developing excessive soil salinity buildup due to the long term operation of the irrigation system.
- (2) An applicant, during the first term of the permit, that owns, leases, or otherwise reserves sufficient land to apply the total volume of effluent less the volume of firm reclaimed water demand utilized for indoor uses may reduce the volume of total effluent in the water balance study by the firm reclaimed water demand utilized for outdoor purposes.

PROPOSED RULE CHANGES TO 30 T.A.C. CHAPTER 309

30 TAC §309.20(b)(3)(B) Effluent storage. An effluent storage study shall be performed to determine the necessary storage requirements. The storage requirements shall be based on a design rainfall year with a return frequency of at least 25 years (the expected 25 year-one year rainfall, alternatively the highest annual rainfall during the last 25 years of record may be used) and a normal monthly distribution, the application rate and cycle, the effluent available on a monthly basis, and evaporation losses. Storage may be reduced based on the volume of firm reclaimed water demand. An example of an effluent storage study is shown in Table 3 of this subparagraph.

30 TAC §309.21 Firm Reclaimed Water Demand.

- (a) An applicant establishes that reclaimed water demand is firm when the applicant:
 - (1) demonstrates to the satisfaction of the executive director that a user will accept a specific volume of reclaimed water on a periodic basis; or
 - (2) demonstrates a specific amount of reclaimed water use by the applicant.
- (b) An applicant may demonstrate its ability to transfer reclaimed water on a periodic basis when it requires a user to accept a specific amount of reclaimed water by contract or by appropriate regulation.
- (c) Applicant must provide the executive director with a list of users, type of use, and areas that receive firm reclaimed water demand. Areas receiving firm reclaimed water demand for outdoor irrigation purposes must be shown on a map that also identifies the buffer zones in compliance with 30 TAC 309.22 (*Reclaimed Water Dispersal Sites*). If the users or areas change, the applicant is required to provide an updated list within 30 days. A change in user or area is not an amendment to the permit.
- (d) Firm reclaimed water demand includes the uses described in 30 TAC §210.32 (*Specific Uses of Reclaimed Water*).
- (e) Reclaimed water dispersal sites must meet the standards in 30 TAC §309.22 (*Reclaimed Water Dispersal Sites*).
- (f) An applicant cannot rely on a transfer of reclaimed water to a user if the user has been found substantially noncompliant, as described in 30 TAC §70.51 (*Mandatory Enforcement Hearings*), within the last five years.
- (g) Applicant is responsible for recording the volume of firm reclaimed water demand that is transferred.
- (h) An applicant that relies on firm reclaimed water demand that will be used for outdoor purposes must demonstrate in a water balance that the firm reclaimed water demand will not result in an unauthorized discharge to waters of the State or a contamination of groundwater.
- (i) An applicant and, to the extent applicable, user must maintain its authorization under 30 TAC Chapter 210 (*Use of Reclaimed Water*) during the term of the permit.
- (j) A permittee that relies on firm reclaimed water demand must receive an authorization required by 30 TAC Chapter 210 (*Use of Reclaimed Water*) prior to initiating construction or, if already constructed, operating a wastewater treatment plant.
- (k) In any phase of a permit, the volume of firm reclaimed water demand an applicant relies upon must be less than the total permitted volume of wastewater.

PROPOSED RULE CHANGES TO 30 T.A.C. CHAPTER 309

30 TAC §309.22 Reclaimed Water Dispersal Sites.

- (a) An applicant that relies upon firm reclaimed water demand to reduce the required dedicated disposal fields or effluent storage required under this Chapter, shall ensure that indoor and outdoor dispersal sites for the reclaimed water have the appropriate authorization under 30 TAC Chapter 210 (*Use of Reclaimed Water*).
- (b) Outdoor reclaimed water dispersal sites must meet the distance standards set in 30 TAC §309.13(c)(1), (2), and (3) (*Unsuitable Site Characteristics*); and 30 TAC §222.81(a)(3) (*Buffer Zone Requirements*).

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



AN ORDER constituting the Decision of the Commission regarding the Petition for Rulemaking filed by the City of Austin; TCEQ Docket No. 2016-0381-PET; Rule Project No. 2016-033-PET-NR

On May 11, 2016, the Texas Commission on Environmental Quality (Commission) considered the petition for rulemaking filed by the City of Austin (Petitioner). The Petitioner filed the petition on March 14, 2016, and requests that the Commission initiate rulemaking to adopt new rules under 30 TAC Chapters 222 and 309 concerning the beneficial reuse of treated effluent.

IT IS THEREFORE ORDERED BY THE COMMISSION, pursuant to Administrative Procedure Act, Texas Government Code § 2001.021, and Texas Water Code, § 5.102 and § 5.103, to initiate rulemaking concerning the issues raised in the petition.

This Order constitutes the decision of the Commission required by the Texas Government Code, § 2001.021(c).

Date Signed: *May 18, 2016*

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Bryan W Shaw
Bryan W Shaw, Ph.D., P.E., Chairman

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts the amendments to §§309.1 - 309.4, 309.10 - 309.14, and 309.20; and new §§309.21 - 309.25.

New §309.23 and §309.25 are adopted *with changes* to the proposed text as published in the June 28, 2019, issue of the *Texas Register* (44 TexReg 3239), and, therefore, will be republished. The amendments to §§309.1 - 309.4, 309.10 - 309.14, and 309.20; and new §§309.21, 309.22, and 309.24 are adopted *without changes* to the proposed text as published and, therefore, will not be republished.

Background and Summary of the Factual Basis for the Adopted Rules

On March 14, 2016, the commission received a petition from the City of Austin (petitioner). The petitioner requested that the commission initiate rulemaking to amend 30 TAC Chapters 222 and 309 (Project Number 2016-033-PET-NR). The rulemaking would allow permittees and applicants to rely on the beneficial reuse of treated wastewater when calculating the amount of land required for land application of treated wastewater. This would allow permittees and applicants to reduce the acreage dedicated for land application that is currently required by rule. The commission approved the petition to initiate rulemaking with stakeholder involvement. The executive director held a stakeholder meeting on August 9, 2016, and the public was invited to comment on the petition. The public comment period was from August 28, 2016 through October 28, 2016.

Based on information presented at the stakeholder meeting, the executive director understands that the petition was made in response to increasing demands on water supplies and decreasing availability of contiguous or neighboring tracts of land that are large enough for domestic wastewater land application under the commission's current rules. This trend is currently appearing in parts of Central Texas where wastewater discharge to water in the state is restricted by the commission's rules and land application of treated wastewater may be the only permissible option. The executive director recognizes that land availability may also be limited in other parts of the state, and that practicable land application options are especially important wherever discharge to water in the state is restricted or infeasible.

The adopted revisions in this chapter and the corresponding adopted revisions in Chapter 222 will allow a reduction in the acreage required for land application of treated effluent by applying a "Beneficial reuse credit" to reduce the flow when calculating the required land application area. An applicant could also request to use a beneficial reuse credit to increase the permitted flow without reducing the land application acreage or to use a beneficial reuse credit to reduce the acreage and increase the permitted flow. The beneficial reuse credit will be based on the demonstrated firm reclaimed water demand. The effluent storage size required by Chapter 309 may not be reduced by the beneficial reuse credit. Adopted new §§309.21 - 309.25 will establish the criteria for demonstrating firm reclaimed water demand, the

procedure for calculating and applying the beneficial reuse credit, and the requirements for a permittee who has been granted a beneficial reuse credit. The adopted amendments also correct inaccurate or outdated references to TAC or provide additional clarity.

Section by Section Discussion

The commission amends Chapter 309 to replace the term "disposal" with "land application" or "application" throughout to reflect that wastewater is beneficially applied and not just disposed of via land.

The commission amends Chapter 309 to replace the term "waste" with "wastewater" throughout to clarify that regulations in this chapter apply to wastewater.

The commission amends Chapter 309 to change surface water and groundwater to "water in the state" to be consistent with the definition of "water in the state" in Texas Water Code (TWC), §26.001.

The commission amends Chapter 309 to update references to ensure current and accurate cross-references, improve readability, improve rule structure, and use consistent terminology. These changes are non-substantive and may not specifically be discussed in the Section by Section Discussion of this preamble.

§309.3, Application of Effluent Sets

The commission amends §309.3(f)(2) to separate existing paragraph (2) into §309.3(f)(2)(A) and (B) to make it clear when Effluent Set 1 and Effluent Set 6 apply.

The commission amends §309.3 to move §309.3(f)(7) to §309.3(f) to define primary treatment prior to use in subsection (f).

§309.10, Purpose, Scope, and Applicability

The commission amends §309.10 to replace the word "chapter" with the word "subchapter" throughout the section. The contents of the section are intended to apply to Subchapter B but not to Subchapters A and C.

§309.11, Definitions

The commission amends §309.11 to replace the word "chapter" with the word "subchapter" in the introductory paragraph. The terms defined in the section were not used in Subchapters A and C and were intended to apply in Subchapter B only. This change constrains applicability of the defined to terms to Subchapter B, which also helps ensure clear understanding and applicability of terms defined and used in adopted Subchapter D.

§309.12, Site Selection to Protect Water in the State

The commission amends §309.12 to change the title from "Site Selection To Protect Groundwater or Surface Water" to "Site Selection to Protect Water in the State" to be consistent with the definition of water in the state in TWC, §26.001.

§309.13, Unsuitable Site Characteristics

The commission amends §309.13(c)(1) - (3) and (5) to clarify that the requirements apply to both surface and subsurface irrigation sites and to ensure consistency with the rules in 30 TAC Chapter 290 (Public Drinking Water). The rule applies to all wastewater irrigation systems, including the soil absorption systems identified in the existing rule.

The commission amends §309.13(d) to change the required thickness for a synthetic liner for a wastewater facility surface impoundment located above a recharge zone of a major or minor aquifer from 30 mils to 40 mils to be consistent with the requirements in 30 TAC Chapter 217 (Design Criteria for Domestic Wastewater Systems).

§309.20, Land Application of Sewage Effluent

The commission amends §309.20 to change the title from "Land Disposal of Sewage Effluent" to "Land Application of Sewage Effluent." The term "land application" clarifies that the section is for beneficial application of wastewater rather than disposal via land.

The commission amends §309.20 to move §309.20(b)(3)(B) before Figure: 30 TAC §309.20(b)(3)(A) to improve readability. The commission consolidates Tables 1 - 3 into the same figure, Figure: 30 TAC §309.20(b)(3)(B).

The commission amends §309.20(b)(4) to correct a reference to parameters listed in paragraph (3)(C) to instead reference the parameters listed earlier in the paragraph.

§309.21, Purpose, Scope, and Applicability

The commission adopts new §309.21(a) to state the purpose and scope of the adopted Subchapter D (Beneficial Reuse Credit).

The commission adopts new §309.21(b) to specify that the rules in adopted Subchapter D apply to an entity who applies for or holds a Texas Land Application Permit (TLAP) for land application of treated domestic wastewater and is seeking to include a beneficial reuse credit in the permit. The adopted subchapter also applies to an entity who holds a permit that includes a beneficial reuse credit. Adopted Subchapter D is intended to give flexibility where discharge to water in the state is restricted by commission rules or is otherwise infeasible.

The commission adopts new §309.21(c)(1) to establish that the rules in adopted Subchapter D do not apply to a facility that is authorized to discharge under a Texas

Pollutant Discharge Elimination System (TPDES) permit issued under 30 TAC Chapter 305 (Consolidated Permits). The executive director determined that since facilities authorized to discharge are not subject to the same land constraints as facilities that must dispose of their treated wastewater by land application, adopted Subchapter D should not apply to facilities authorized to discharge.

The commission adopts new §309.21(c)(2) to establish that the rules in adopted Subchapter D do not apply to industrial facilities. The executive director determined that industries have flexibility through 30 TAC Chapter 210, Subchapter E (Special Requirements for Use of Industrial Reclaimed Water), that is not available to domestic wastewater treatment facilities which, by necessity, are bound to the populated areas they serve.

The commission adopts new §309.21(d) to clearly state that adopted Subchapter D does not allow the discharge of wastewater or reclaimed water to water in the state. The adopted language specifically states that a discharge from a pond or storage unit at the user's site directly resulting from rainfall events is considered an unauthorized discharge. This encourages a user to properly manage the reuse water they receive from the permittee. Adopted Subchapter D does not affect whether a discharge of wastewater or reclaimed water to water in the state is subject to applicable enforcement action under other law and rules.

§309.22, Definitions

The commission adopts new §309.22(1) and (2) to define "Beneficial reuse credit" and "Firm reclaimed water demand." The adopted definitions are necessary to establish the concept of the beneficial reuse credit adopted in Subchapter D. The beneficial reuse credit reduces the amount of flow used for calculating the required land application area. The firm reclaimed water demand is the amount of water used by the permittee or authorized users for beneficial reuse and is used to calculate the beneficial reuse credit.

The commission adopts new §309.22(3) to define "Reclaimed water" to establish usage of the term as it relates to adopted Subchapter D and maintain consistency with Chapter 210 (Use of Reclaimed Water).

The commission adopts new §309.22(4) to define "Total monthly volume" to clarify how to calculate the beneficial reuse credit in adopted §309.24.

The commission adopts new §309.22(5) to define "Total nitrogen" and establish the composition of the pollutant to be tested in the treated effluent as required in adopted §309.25(c), discussed later in this preamble.

The commission adopts new §309.22(6) to define "User" as the term is defined in Chapter 210 for consistency and to establish usage of the term as it relates to adopted Subchapter D.

The commission adopts new §309.22(7) to define "Water use data" to clarify that data used in demonstrating firm reclaimed water demand may be reclaimed water use data or potable water use data from a user who commits to substituting reclaimed water for existing potable water use.

§309.23, Demonstrating Firm Reclaimed Water Demand

The commission adopts new §309.23(a) to establish the requirement to submit five years of consecutive data for each user, if available, to demonstrate firm reclaimed water demand. If five years of data is not available, a minimum of two consecutive years of water use data is required. The executive director determined that at least two years of water data is necessary to support a user's demand as firm. Data submitted must be from the period immediately preceding the date the application is received.

The commission adopts new §309.23(b) to require the applicant to report the total monthly volume of water used. The applicant shall segregate indoor uses and outdoor uses in the monthly volumes submitted. The executive director needs this information to determine the beneficial reuse credit.

The commission adopts new §309.23(c) to clarify that water use data submitted for establishing firm reclaimed water demand may be from water use by the applicant or from other users. Contractual agreements with users for reclaimed water must be for a minimum term of five years to reasonably ensure that the user intends to use reclaimed water for the five-year term of the permit.

The commission adopts new §309.23(d) to require water use data submitted for establishing firm reclaimed water demand to be for the same type of use proposed. For example, if a user commits to using reclaimed water instead of potable water for toilet flushing at a particular facility, then the water use data must be for toilet flushing at that facility.

The commission adopts new §309.23(e) to specify the requirements for water use data submitted for establishing firm reclaimed water demand for each user: the amount of water used, the type of use, and the number of acres irrigated, if for an outdoor use. The amount of water used and type of use is necessary for calculating the beneficial reuse credit, as discussed later in this preamble. The number of acres irrigated for outdoor uses is necessary for estimating the application rate of reclaimed water.

The commission adopts new §309.23(f) to provide that the executive director may exclude a user's water data if the executive director determines that the user's water data is unreliable due to the user's noncompliance with state laws, rules, or permit

conditions within the five-year period immediately preceding the date the application is received.

The commission adopts new §309.23(g) to provide that the executive director may deny a beneficial reuse credit if the applicant has had a violation that resulted in an enforcement action in the five-year period immediately preceding the date the application is received. All permit applications are subject to a compliance history review, as stated in 30 TAC Chapter 60 (Compliance History). The adopted rule ensures the executive director the discretion to consider an applicant's compliance history when reviewing a request for a beneficial reuse credit.

The commission adopts new §309.23(h) to allow less than two years of water use data to demonstrate firm reclaimed water demand at the discretion of the executive director. Less than two years of water use data may be considered when demonstrating firm reclaimed water demand, if the executive director determines that the data is reliable. For example, an entity that is building reclaimed water infrastructure may receive a phased permit that increases the permitted flow as the reclaimed water infrastructure is built-out. Additionally, under certain circumstances the executive director may accept a water balance to demonstrate firm reclaimed water demand. At adoption, §309.23(h) was amended in response to public comment. Proposed §309.23(h) prohibited the use of prospective or speculative water use data when applying for a beneficial reuse credit.

§309.24, Calculating and Using Beneficial Reuse Credit

The commission adopts new §309.24(a) to clarify the method for calculating beneficial reuse credit for outdoor uses. The commission adopts §309.24(a)(1) to clarify that, for users with less than five years of water use data, the beneficial reuse credit is calculated as 80% of the lowest single month of total outdoor water use. The commission adopts new §309.24(a)(2) to clarify that, for users with five or more years of water use data, it is calculated as 80% of the average of the lowest three months of total outdoor water use. Water use for outdoor purposes can vary dramatically due to climate and weather, therefore using the lowest month or average of the lowest three months of total water use mitigates some of the seasonal variation in outdoor use. Calculating 80% of the lowest month or lowest three months of total water use provides an additional margin of safety for unforeseen changes in water use rates. Allowing the average of the lowest three months for users with five or more years of data encourages historic or more established users and provides a more accurate representation of their water use.

The commission adopts new §309.24(b) to clarify the method for calculating beneficial reuse credit for indoor uses. The commission adopts new §309.24(b)(1) to clarify that, for users with less than five years of water use data, beneficial reuse credit is calculated as 100% of the lowest month of total water use.

The commission adopts new §309.24(b)(2) to clarify that, for users with five or more years of data, the beneficial reuse credit is calculated as 100% of the average of the lowest three months of total water use data. Water use for indoor purposes is not subject to the same degree of seasonal variation as outdoor use. Using the lowest month or average of the lowest three months of total water accounts for temporal variations, if present. For example, water use data for toilet flushing from a school building may decrease significantly during the summer months. Because indoor use is less variable than outdoor use, 100% of the lowest month or average of the lowest three months of total water use may be used in calculating the beneficial reuse credit. Allowing the average of the lowest three months for users with five or more years of data encourages historic or more established users and provides a more accurate representation of their water use.

The commission adopts new §309.24(c) to allow the beneficial reuse credit to be used when calculating the land application area required based on the hydraulic application rate. The applicant, if granted a beneficial reuse credit by the executive director, may reduce the permitted wastewater flow volume by the beneficial reuse credit when calculating the land application area required based on the hydraulic application rate for facilities that are regulated under Chapters 222 and 309. This allows an entity to reduce the required size of the land application site. An applicant could also foreseeably request to use a beneficial reuse credit to increase the permitted flow

without changing the land application acreage or to change both the acreage and the permitted flow.

The commission adopts new §309.24(d) to prohibit reducing the land application site area by more than 50% of the area required based on the permitted flow. The applicant must have a land application site area that can receive at least 50% of the permitted flow, even if 100% of the effluent is used as reclaimed water. If an applicant who was granted a beneficial reuse credit in a previous permit action requests an increase in permitted flow, they must still satisfy this requirement. This requirement provides a reasonable margin of safety against unauthorized discharges (e.g., if a user is not able to accept reclaimed water).

The commission adopts new §309.24(e) to prohibit the reduction of the required storage. This applies to facilities that are regulated under Chapters 222 and 309. Effluent storage is especially necessary if the land application site acreage has been reduced by the beneficial reuse credit and the amount of reclaimed water distributed to users declines. Not allowing reductions in effluent storage provides an extra safety measure against unauthorized discharges (e.g., if a user is not able to accept reclaimed water).

The commission adopts new §309.24(f) to allow the use of water use data for a user with less than two years of data to recalculate the beneficial reuse credit during a

permit renewal on a case-by-basis. Because changes in users do not require an amendment to the permit, the commission finds it appropriate to allow for newer users with less than two years of water use data to be included in the recalculation of the beneficial reuse credit during a renewal or in keeping track of their beneficial reuse credit.

§309.25, Requirements

The commission adopts new §309.25 to clarify the application requirements for an applicant seeking a beneficial reuse credit.

Adopted new §309.25(a)(1) requires the applicant to provide a list of users and irrigation areas considered in demonstrating firm reclaimed water demand. For users that propose to use the reclaimed water for irrigation, the list must also include the acreage and crops irrigated at each irrigation site. The executive director needs this information for the public record and for review and enforcement of the beneficial reuse credit.

Adopted new §309.25(a)(2) requires the applicant to submit a map of users using the applicant's reclaimed water. The executive director needs this information for the public record and for review and enforcement of the beneficial reuse credit.

Adopted new §309.25(a)(3) requires the applicant to submit the water use data used to calculate firm reclaimed water demand. The executive director will review the water use data for accuracy and eligibility.

Adopted new §309.25(a)(4) allows the executive director to require additional information as needed for reviewing the application. This may include additional information on firm reclaimed water demand users to provide the executive director with the information necessary to appropriately review the application.

Adopted new §309.25(a)(5) requires a permittee to apply for an amendment under Chapter 305 to obtain or change a beneficial reuse credit. For example, increasing the beneficial reuse credit to reduce the size of land application site would require a major amendment because it would make the permit less stringent by reducing the required land application area. Decreasing a beneficial reuse credit without decreasing the permitted flow would require a major amendment if it increases the required size of the land application site, potentially affecting adjacent landowners. Decreasing the beneficial reuse credit and the permitted flow by the same amount would require a minor amendment because this change would not result in less-restrictive permit conditions and would not affect adjacent landowners.

Adopted new §309.25(b)(1) requires an applicant to receive authorization in accordance with Chapter 210 before applying for a beneficial reuse credit. This

requirement ensures that the applicant is an authorized provider of reclaimed water. The commission foresees that a new facility may be able to provide at least two years of data from proposed users and recognizes that a new facility would not be able to obtain authorization under Chapter 210 without an existing permit; therefore, the adopted rule provides that the executive director may temporarily waive the requirement to have a Chapter 210 authorization if a new facility applicant provides the information required to demonstrate firm reclaimed water demand. The adopted rule requires the executive director to phase the permit for a new facility so that the beneficial reuse credit will not become effective until the applicant obtains the authorization required by Chapter 210.

Adopted new §309.25(b)(2) requires the permittee and users, as applicable, to maintain authorization under Chapter 210 during the term of the permit to which the beneficial reuse credit is applied. This requirement prevents unauthorized use of reclaimed water.

Adopted new §309.25(b)(3) limits the wastewater permit term to five years if a beneficial reuse credit has been granted. This requirement results in a more frequent review of the water use data from authorized users and provides a more frequent assessment of the permit requirements, which helps to proactively ensure that a facility that relies on a beneficial reuse credit will be able to operate without causing or contributing to a discharge to water in the state.

Adopted new §309.25(b)(4) requires a permit that includes a beneficial reuse credit to specify both the permitted flow limit (the total flow the facility is permitted to treat) and the flow that may be land applied, which is equal to the permitted flow minus the beneficial reuse credit. Both flow limits are necessary to ensure protection of the environment because they are derived in different ways and are used for different purposes. For example, the permitted flow is based on wastewater generation estimates and is used for treatment facility design, but the land application limit is based on a hydraulic or nutrient application rate suitable for plant uptake during irrigation and is used to determine the required size of the land application site.

Adopted new §309.25(b)(5) requires a permittee that is granted a beneficial reuse credit to have a contractual agreement to pump and haul unused treated effluent and requires the applicant to dispose of excess wastewater under the contractual agreement if: a user no longer needs the reclaimed water, a new user has not been contracted to accept the unused reclaimed water, the storage capacity is not adequate to store the unused reclaimed water, and additional application to the permitted land application area would exceed the permitted application rate or is otherwise prohibited by the permit, such as when the ground is saturated or frozen. The permittee may use an alternate method of disposal previously approved by the executive director. This requirement provides a safety mechanism in case the amount of reclaimed water actually used is less than the firm reclaimed water demand demonstrated when

calculating the beneficial reuse credit. A permittee who has been granted a beneficial reuse credit must remain compliant with the application rate authorized in the permit and is not authorized to discharge wastewater into water in the state, even if a reclaimed water user no longer accepts reclaimed water from the permittee.

Adopted new §309.25(b)(6) requires a permittee who is granted a beneficial reuse credit to meet the effluent quality standards for Type II reclaimed water, as described in §210.33 (Quality Criteria and Specific Uses for Reclaimed Water). This rule will require the effluent limits appropriate for Type II reclaimed water to be incorporated into the permit. Failure to meet the effluent limits is a permit violation that may be subject to enforcement action. These limits are necessary to protect human health and the environment.

Adopted new §309.25(c)(1) requires a permittee who has been granted a beneficial reuse credit to notify the executive director of any changes in users or irrigation areas within 30 days after the change. This requirement provides the commission with accurate information on the users of reclaimed water. A change in users or in areas used for outdoor use is not an amendment to the permit.

Adopted new §309.25(c)(2) requires a permittee that has been granted a beneficial reuse credit to maintain monthly data of the amount of reclaimed water used by each user, type of use for each site, acreage of each site for irrigation, crops irrigated at

each irrigation sites, and total nitrogen concentration of the treated effluent. This data shall be sent to the executive director by September 30th of each year. The executive director will use the monthly reclaimed water use data, area of irrigation sites, crops irrigated and total nitrogen concentration of the treated effluent to determine whether the beneficial reuse credit is still appropriate and to verify that reclaimed water is not being over-applied on irrigation sites. The permittee shall also submit to the executive director a recalculation of the beneficial reuse credit by September 30th of each year. Recalculating the beneficial reuse credit with the most recent year of data will help the executive director determine whether the beneficial reuse credit is still appropriate. However, the recalculation of the beneficial reuse credit does not change the beneficial reuse credit or the required land application area in the permit unless the permit is amended. As described in adopted new §309.24(f), the permittee may use water use data from users with less than two years of data for recalculating the beneficial reuse credit on a case-by-case basis, but not to change the beneficial reuse credit.

Adopted new §309.25(c)(3) states that if the recalculated beneficial reuse credit is reduced, the executive director may require a permit amendment. This allows the commission to amend permits as necessary to ensure that permits are protective of the environment.

Adopted new §309.25(c)(4) establishes the frequency of total nitrogen testing of the treated effluent. Total nitrogen shall be tested quarterly for the first year to provide a

more comprehensive representation of the effluent quality. After the first year, total nitrogen may be sampled annually, upon approval of the executive director. Data on the total nitrogen concentration of the effluent, in conjunction with the amount of reclaimed water applied and the acreage of irrigation sites, allows the executive director to calculate the amount of nitrogen applied at outdoor use sites and determine whether nitrogen was over-applied.

Adopted new §309.25(c)(5) requires the permittee to submit their monthly effluent monitoring reports to the executive director. Currently, these reports are required to be maintained on site (for TLAPs) and be made available to commission staff upon request or during a permit action. The adopted rule will require permittees that have been granted a beneficial reuse credit to submit these monthly reports to the executive director, as is already required for TPDES permits. The adopted rule is necessary to verify that the permittee complies with adopted §309.25(b)(6) pertaining to effluent quality.

Adopted new §309.25(c)(6) states that the executive director may require additional limitations or more frequent testing based on the results submitted annually and with the application on a case-by-case basis. At adoption, §309.25(c)(6) was added in response to public comment.

Final Regulatory Impact Analysis Determination

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking is not subject to Texas Government Code, §2001.0225, because it does not meet the definition of a "Major environmental rule" as defined in that statute. Texas Government Code, §2001.0225, applies to major environmental rules the result of which are to exceed standards set by federal law, express requirements of state law, requirements of a delegation agreements between state and the federal governments to implement a state and federal program, or rules adopted solely under the general powers of the agency instead of under a specific state law.

A "Major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The adopted rulemaking does not adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The specific intent of the rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency, including practices, techniques, and technologies that make water use more efficient, by allowing permittees and applicants to rely on the beneficial reuse of

treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for land application of wastewater. The adopted rulemaking affects the same class of regulated entities, except that the entities may be able to reduce the dedicated land application acreage that is currently required by rule, which incentivizes and encourages wastewater permittees and applicants to reuse treated wastewater.

The adopted rulemaking modifies the state rules related to subsurface irrigation and land application of treated wastewater. This may have a positive impact on the environment, human health, or public health and safety; however, the adopted rulemaking will not adversely affect the economy, a sector of the economy, productivity, competition, or jobs within the state or a sector of the state. Therefore, the commission concludes that the adopted rulemaking does not meet the definition of a "Major environmental rule."

Furthermore, even if the adopted rulemaking did meet the definition of a "Major environmental rule," it is not subject to Texas Government Code, §2001.0225, because it does not meet any of the four applicable requirements specified in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225(a), applies only to a state agency's adoption of a "Major environmental rule" that: 1) exceeds a standard set by federal law, unless state law specifically requires the rule; 2) exceeds an express requirement of state law, unless federal law specifically requires the rule; 3)

exceeds a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) is adopted solely under the general powers of the agency instead of under a specific state law.

In this case, the adopted rulemaking does not meet any of the four requirements in Texas Government Code, §2001.0225(a). First, this rulemaking does not exceed standards set by federal law. Second, the adopted rulemaking does not exceed an express requirement of state law, but rather meets the requirements under state law to adopt rules suggesting best management practices for achieving the highest practicable levels of water conservation and efficiency, and regulate more efficiently, the land application of treated wastewater by identifying practices, techniques, and technologies that make water use more efficient. Third, the adopted rulemaking does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program. Finally, the commission adopts the rulemaking under TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121. Therefore, the commission does not adopt the rulemaking solely under the commission's general powers.

The commission invited public comment regarding the Draft Regulatory Impact Analysis Determination during the public comment period. No comments were received on the Draft Regulatory Impact Analysis Determination.

Takings Impact Assessment

The commission evaluated the adopted rulemaking and performed an analysis of whether it constitutes a taking under Texas Government Code, §2007.043. The following is a summary of that analysis. The specific purpose of the rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency by modifying TAC to allow permittees and applicants to rely on the beneficial reuse of treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for land application of wastewater. The rulemaking will substantially advance this stated purpose by adopting language intended to regulate more efficiently the land application of treated wastewater by incentivizing and encouraging wastewater permittees and applicants to reuse treated wastewater.

Promulgation and enforcement of the adopted rules will not be a statutory or constitutional taking of private real property. Specifically, the adopted rulemaking does not apply to or affect any landowner's rights in private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real

property and reduce any property's value by 25% or more beyond that which would otherwise exist in the absence of the regulations. These actions will not affect private real property.

Consistency with the Coastal Management Program

The commission reviewed the adopted rulemaking and found the rulemaking is identified in the Coastal Coordination Act implementation rules, 31 TAC §505.11(b)(2) (Actions and Rules Subject to the Coastal Management Program), and will, therefore, require that goals and policies of the Texas Coastal Management Program (CMP) be considered during the rulemaking process.

The commission reviewed this rulemaking for consistency with the CMP goals and policies in accordance with the regulations of the Coastal Coordination Advisory Committee and determined that the rulemaking will not affect any coastal natural resource areas because the rules only affect counties outside the CMP area and is, therefore, consistent with CMP goals and policies.

The commission invited public comment regarding the consistency with the CMP during the public comment period. No comments were received regarding the consistency with the CMP.

Public Comment

The commission held a public hearing on July 25, 2019. The comment period closed on July 30, 2019. The commission received comments from Barton Springs Edwards Aquifer Conservation District (BSEACD), City of Austin Intergovernmental Relations (City of Austin), City of Lago Vista, City of Marble Falls, Clean Water Action, Clean Water Action members (638 members), Greater Edwards Aquifer Alliance (GEAA), Green Civil Design, Hill Country Alliance, Lower Colorado River Authority (LCRA), LJA Engineering, League of Women Voters of Texas (LWVTX), Protect Our Water (POW), Representative Erin Zwiener, Save Our Springs (SOS), Wimberley Valley Watershed Association (WVWA), and two individuals. One commenter was in support of the rulemaking and the rest of the commenters were in support of the rulemaking, but suggested changes.

Response to Comments

Comment

One individual expressed support for the rulemaking.

Response

The commission acknowledges this comment. No change was made in response to this comment.

Comment

Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA expressed support for new §309.24(d), which prohibits reducing the disposal site area by more than 50% of the area required based on the permitted flow and new §309.24(e), which prohibits the reduction of the required storage based on beneficial reuse. In order to protect against unauthorized discharge, the maximum reduction limit ensures that land will be available for disposal in case there is more reclaimed water available than can be reused and the prohibition of the reduction of the storage requirement is a critical safeguard in protecting against unauthorized discharge.

Response

The commission acknowledges these comments. No change was made in response to these comments.

Comment

In reference to new §309.24(e), which prohibits the reduction of the required storage based on beneficial reuse, the City of Lago Vista and Representative Erin Zwiener suggested allowing the reduction of storage based on beneficial reuse.

LCRA suggested allowing off-site storage at the user's site to count toward the storage requirement because a distributed system of storage with reclaimed water stored at the user's site could reduce storage requirements at the TLAP facility and allow TLAP

permittees to expand treatment capacity without an expensive and possibly redundant or unnecessary expansion of the on-site storage at the TLAP facility.

Response

The prohibition of reducing the storage requirement is a necessary precaution to prevent unauthorized discharges in the event there is more reclaimed water than can be applied or when a user no longer needs water from the permitted facility.

The commission explored the option of allowing off-site storage at the site of the user. However, the commission determined this did not provide an adequate safeguard when a user no longer needs water from the permitted facility. Beneficial reuse under Chapter 210 is on an on-demand basis and, therefore, even with a contract, a user can refuse to accept reuse water on any given day, which renders on-site storage from contracted users as temporary and unreliable. Therefore, the prohibition of reducing the storage is necessary to prevent unauthorized discharges in these cases.

No change was made in response to these comments.

Comment

Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA expressed support for new §309.25(b)(5) that requires the

permittee that is granted a beneficial reuse credit to have a contractual agreement to pump and haul unused treated effluent and requires the permittee to dispose of excess wastewater under the contractual agreement. This will guarantee that a permittee has a plan in place to dispose of excess effluent and prevent an unauthorized discharge.

Response

The commission acknowledges these comments. No change was made in response to these comments.

Comment

Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA expressed support for new §309.25(c)(5) that requires the permittee to submit their monthly effluent monitoring reports to the executive director. Currently, records regarding flow rates, irrigation volumes, and effluent quality are maintained by operators on-site and, therefore, the public does not have opportunity to review data except during contested case hearings. The availability of wastewater irrigation records for review by TCEQ staff and the public will increase operational accountability.

Response

The commission acknowledges these comments. No change was made in response to these comments.

Comment

Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA recommended strengthening §309.25(b)(6) that requires more stringent effluent limitations than Type II reclaimed water. The commenters expressed concern that the Type II effluent limitations are not sufficient to adequately protect surface water quality and request additional effluent standards that would not adversely impact sensitive creeks and streams, especially by minimizing the discharge of nitrogen and phosphorus.

SOS suggested higher treatment standards for reclaimed water being irrigated in the contributing zone of the Edwards Aquifer, particularly limits on nitrogen and phosphorus. Increases in these nutrients can cause algae blooms, lower dissolved oxygen levels, and harm to aquatic life in surface streams, springs, and groundwater.

GEAA and SOS stated that the City of Austin has performed studies that show nutrient increases in streams downstream of TLAP irrigation sites and, therefore, recommend nutrient loading standards similar to those for TLAPs be implemented for all irrigated beneficial reuse to prevent that degradation. Where a nutrient load calculation indicates the potential for application rates higher than what can be used by

vegetation, effluent nutrient reduction should be required prior to beneficial reuse for landscape irrigation. SOS attached a copy of a study the City of Austin performed, "Reclaimed Water Irrigation Water Quality Impact Assessment" (April 2016).

Response

The rulemaking includes Type II requirements as a minimum for facilities that are granted a beneficial reuse credit. The TCEQ has determined that requiring Type I for all permittees that are granted a beneficial reuse credit is unnecessary since not all users will be Type I. However, if the permittee provides reclaimed water for Type I reuse, the permittee would still be responsible for further treatment to the Type I standards.

The commission respectfully disagrees that limitations for nutrients should be added to all permits with a beneficial reuse credit. However, §309.25(c)(6) has been added to the rulemaking to state that the commission may require additional limitations or more frequent testing based on the results submitted annually and with the application on a case-by-case basis.

Comment

BSEACD, Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA recommended adding buffer zone

requirements to beneficial reuse sites that are used to demonstrate firm reclaimed water demand.

BCEACD, Clean Water Action, and POW recommended requiring a minimum buffer zone between reuse sites and riparian and aquifer recharge features in order to protect ambient water quality.

GEAA and SOS stated that buffer zone protection is equally important to protect water quality whether the effluent application is through TLAP or beneficial reuse authorization.

SOS suggested applying the same buffer zone requirements from §309.13 (Unsuitable Site Characteristics) and §222.81 (Buffer Zone Requirements) to sites that count toward a permittee's beneficial reuse credit.

The City of Marble Falls supported no buffer zone requirements. The City of Marble Falls expressed concern that the implementation of buffer zones could make pursuing a beneficial reuse credit infeasible for many communities.

Response

The commission respectfully disagrees with BSEACD, Clean Water Action, Clean Water Action members, GEAA, Hill Country Alliance, LWVTX, POW, SOS, and WVWA.

The rulemaking allows permittees to take credit for beneficial reuse under Chapter 210, but does not amend Chapter 210. If buffer zone requirements were included in this rulemaking, it would not prevent the use of reclaimed water within the buffer zone, it would only prohibit water use data from being included in calculating the beneficial reuse credit.

No change was made in response to these comments.

Comment

GEAA and SOS suggested requiring monitoring of surface water downstream of beneficial reuse areas to assess potential adverse effects from expanded reclaimed water irrigation under the proposed rulemaking. The data gathered could be used in future rulemaking to formulate regulations that protect against any observed water quality degradation from reclaimed water use.

SOS suggested flexible methods and timing that could allow volunteer citizen-scientists to collect water samples or suggest a small application fee for the beneficial reuse credit that could fund a study performed by the TCEQ or an independent entity.

Response

This rulemaking does not address monitoring requirements for Chapter 210 users. Therefore, requiring downstream monitoring is beyond the scope of this rulemaking.

Additionally, the commission foresees multiple complications such as determining where to sample or how many monitoring locations to include, particularly when the user list can change frequently. Further, surface water quality data would not clearly identify the source of degradation due to the nature of non-point sources. No change was made in response to these comments.

Comment

BSEACD, City of Austin, GEAA, LCRA, and SOS suggested a more flexible method of determining firm reclaimed water demand to allow applicants for a new TLAP or an existing facility seeking to expand to serve new growth. SOS recommends a phased approach that allows the permitted flow to increase incrementally as developments are built out. Alternatively, SOS recommends allowing a permittee to submit a water balance for larger tracts to be irrigated to establish firm reclaimed water demand for future use of reclaimed water.

BSEACD and City of Austin recommended allowing less than two years of consecutive data be allowed to demonstrate firm reclaimed water demand for new developments under the following conditions: the application or renewal is sought to support new

development; during the initial construction, the new development will include reclaimed water infrastructure (purple pipe) that will be operational at the time of occupancy; and firm reclaimed water demand for the new development is calculated using maximum building occupancies and fixture efficiencies for indoor demands and local precipitation and evapotranspiration data for outdoor demands.

Response

The commission agrees that there may be circumstances under which less than two years of data may be acceptable in demonstrating firm reclaimed water demand.

The prohibition of prospective or speculative reclaimed water use to demonstrate firm reclaimed water demand in proposed §309.23(h), was changed at adoption.

Revised §309.23(h) allows less than two years of data to demonstrate firm reclaimed water demand at the discretion of the executive director. For example, the commission believes a phased approach in increasing the permitted flow as the build-out of reuse infrastructure continues could be a situation where the executive director would allow less than two years of water use data. Additionally, under certain circumstances, a water balance could be used to demonstrate firm reclaimed water demand.

Comment

SOS expressed support for new §309.21(d) which considers a discharge from a user's pond or storage unit that is directly resulting from a rainfall event an unauthorized

discharge. SOS stated this rule is important to close a potential loophole that would otherwise allow users to dispose of wastewater via "accidental" discharge.

Response

The commission acknowledges this comment. No change was made in response to this comment.

Comment

The City of Lago Vista and City of Marble Falls suggested allowing a 1:1 credit for proved reuse.

Response

The commission respectfully disagrees. The commission determined that counting 80% of the lowest month(s) for calculating the firm reclaimed water demand is a necessary safety factor to account for seasonal variability for outdoor uses. However, the adopted rulemaking does allow for 1:1 credit for proved reuse for indoor uses. No change was made in response to these comments.

Comment

LJA Engineering suggests considering applying for a beneficial reuse credit be counted as a minor amendment since it would be a reduction in flow to permitted land application areas.

Response

The commission respectfully disagrees. The commission determined that granting a beneficial reuse credit to reduce the land application area is a major amendment because allowing the reduction of the land application area makes the permit less stringent. However, once a permit with a beneficial reuse credit has been issued, changing to a different phase would not require an amendment. Additionally, the commission determined that applying for a beneficial reuse credit would require a major amendment to adequately allow for public notice and public comment. No change was made in response to this comment.

Comment

An individual commented that there is little information promoting rainwater as a viable alternative to the use of potable water for the purpose of irrigation. The individual believes that harvesting rainwater is a smart option.

Response

The commission agrees that harvesting rainwater is a good alternative to the use of potable water for the purpose of irrigation. However, the commission does not regulate the use of rainwater under Chapter 309 and, therefore, is beyond the scope of this rulemaking. No change was made in response to this comment.

Comment

Green Civil Design suggested that the monthly volume used should only be required for the use being applied for (indoor, outdoor, or both). If the irrigation is metered separately and only outdoor use is being applied for there should not be a requirement to submit indoor use volumes.

Response

The commission agrees with this comment. Monthly volumes are required only for the type of use being applied for. No change was made in response to this comment.

Comment

Green Civil Design stated that some portion of irrigation systems will need to be supplemented with raw or potable water to meet peak demands. This supplementation needs to be considered when total nitrogen application is being evaluated. The total nitrogen should be tested after the mixing point with any supplemented water.

Response

Total nitrogen will be required to be tested at the wastewater treatment plant prior to mixing with any supplemental water. Total nitrogen should not be over-estimated for systems that need to supplement with raw or potable water as long as the volume of reclaimed water delivered to a user or provider, as required by

§210.36 (Record Keeping and Reporting). No change was made in response to this comment.

SUBCHAPTER A: EFFLUENT LIMITATIONS

§§309.1 - 309.4

Statutory Authority

The amendments are adopted under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041,

which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also adopted under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.1. Scope and Applicability.

(a) The purpose of this subchapter [these sections] is to promulgate a set of effluent quality limitations for treated domestic sewage which will be required of permittees as appropriate to maintain water quality in accordance with the commission's surface water quality standards. Any incorporation of federal regulations into this chapter shall apply only to disposal of domestic sewage.

(b) Secondary treatment, with exceptions applicable to certain stabilization pond systems and other natural systems, is defined as a minimum reduction of pollutants to meet the [following] quality specified in Figure: 30 TAC §309.1(b):

Figure: 30 TAC §309.1(b) (No change to the figure as it currently exists in TAC.)

Biochemical Oxygen Demand (BOD₅), 5-Day (milligram per liter, mg/l)

30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65

Total Suspended Solids (TSS) (mg/l)

30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65

Dissolved Oxygen (DO) (mg/l)

Single Grab (minimum) 2.0

pH (Standard Units)

Within limits of 6.0 - 9.0

(c) Effective April 1988, all permits containing an ammonia-nitrogen effluent limit are [hereby] modified to change Biochemical Oxygen Demand (BOD₅) [BOD₅] to carbonaceous biochemical oxygen demand (CBOD₅).

(d) Effective January 1, 1988, any permit containing a BOD₅ effluent limitation may be monitored and reported as CBOD₅ as long as nitrogen is monitored and reported as ammonia-nitrogen at the same sampling frequency. If the permit authorizes a discharge to land or an evaporation pond only, ammonia-nitrogen monitoring and reporting are not required to change to CBOD₅.

(e) The state [State] of Texas has established a state water quality management program and a continuing planning process which sets forth the strategy and procedures for accomplishing the management program's objectives. Essential elements of the program include updates of basin plans, total maximum daily loads, and wasteload evaluations by basin segments. In order to achieve compliance with water quality standards within certain segments, more stringent effluent quality limitations other than basic secondary treatment may be required to protect water quality.

§309.2. Rationale for Effluent Sets.

(a) The effluent sets in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) are intended to represent standard levels of treatment normally required for domestic wastewater treatment plants.

(b) Modifications to the effluent sets [uniform sets of effluent criteria] listed in §309.4 of this title may be considered by the commission when effluent limits more stringent than secondary treatment are required in order to maintain desired water quality levels.

(c) On a case-by-case basis, modifications to the effluent sets [uniform effluent criteria] listed in §309.4 of this title may be considered by the commission for certain existing, natural systems which cannot consistently meet pH or total suspended solids (TSS) limitations [criteria] due to the inherent variability of a particular system. Modifications to the effluent sets [criteria] may be allowed for a natural system designed for treatment or polishing with a discharge directly into surface water in the state [waters]. Natural systems include, but are not necessarily limited to, aerated lagoons followed by stabilization ponds, facultative ponds, stabilization ponds, and constructed wetlands. For the purpose of this chapter, playa lakes are not considered

natural systems. The commission will consider the following factors in approving a modification to the effluent sets [criteria]:

(1) Any modification shall not allow a discharge which would cause a violation of the commission's surface water quality standards or any applicable total maximum daily loads [(TMDLs)] or wasteload evaluation.

(2) A proposal for a modification must be supported by an engineering report, prepared and sealed by a licensed Texas [qualified] professional engineer representing the permit applicant, which justifies the request for modification with specific information relating to the proposed design and that design's inherent limitations. For considering a request for modification of an existing system that cannot achieve permitted pH or TSS limitations, the engineering report must also document past efforts of design modification, operation, and maintenance, and include data showing for the past three years, influent and effluent hydraulic and organic loadings and the resultant effluent quality achieved.

(3) The commission may set narrative effluent limitations and effluent monitoring requirements as an alternative to a specific numerical effluent limitation when a specific numeric effluent limitation cannot be met because of, but not limited to, seasonal or operational factors. These narrative requirements shall ensure that necessary operational and maintenance actions are consistently carried out by the

permittee to meet applicable water quality standards. The commission may request resumption of the original numerical limitations during the next permit renewal or amendment [at the expiration of the permit] based on a review of the discharge effluent data.

(4) The commission may suspend setting a specific numerical effluent limitation for a temporary period of time not to exceed the remainder of the permit term, pending a review of the actual performance of a natural system's design as long as the facility meets paragraph (1) of this subsection. During any temporary suspension, the permittee must document that the system is operated and maintained for optimal performance in accordance with an operation and maintenance manual prepared in accordance with Chapter 217 of this title (relating to Design Criteria for Domestic Wastewater Systems) or Chapter 317 of this title (relating to Design Criteria Prior to 2008) as applicable [for Sewerage Systems] and is meeting water quality standards. After review of performance data and related information submitted by the permittee in a permit application, for [at time of] permit renewal or amendment, or when submitted at the request of the executive director, the commission may set specific numerical effluent limitations consistent with [the criteria of] this subchapter and the performance documented for the particular system.

§309.3. Application of Effluent Sets.

(a) Discharges into effluent limited segments.

(1) All discharges into effluent limited segments shall, at a minimum, achieve secondary treatment. An effluent limited segment is any segment which is presently meeting or will meet applicable water quality criteria following incorporation of secondary treatment for domestic sewage treatment plants and/or best practicable treatment for industries.

(2) New or increased discharges into effluent limited segments shall achieve that level of treatment deemed necessary by the commission, based on the assimilative capacity and uses of the receiving stream.

(b) Discharges into water quality impaired [limited] segments.

(1) All discharges into water quality impaired [limited] segments for which evaluations have been developed shall, at a minimum, achieve the treatment level specified in the recommendations of the evaluation for that discharge. An impaired [A water quality limited] segment is a surface water segment classified by the commission as water quality limited where conventional treatment of wastewater

[waste] discharged to the segment is not stringent enough for the segment to meet applicable water quality standards; monitoring data have shown significant violations of water quality standards; advanced waste treatment for point sources is required to protect existing exceptional water quality; or the segment is a public domestic water supply reservoir used to supply drinking water.

(2) Discharges into water quality impaired [limited] segments for which wasteload evaluations or total maximum daily loads have not been developed shall, at a minimum, achieve secondary treatment as provided by §309.1 of this title (relating to Scope and Applicability).

(c) Discharges into certain reservoirs. Any discharge made within five miles upstream of a reservoir or lake which is subject to on-site/private sewage facility regulation adopted under Texas Water Code, Chapter 26 or Texas Civil Statutes, Article 4477-7e, or which may be used as a source for public drinking water supply shall achieve, at a minimum, Effluent Set 2 in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants). Five miles shall be measured in stream miles from the normal conservation pool elevation. The commission may grant exceptions to this requirement where it can be demonstrated that the exception would not adversely impact water quality.

(d) Discharges from stabilization ponds. Effluent Set 3 in §309.4 of this title shall apply to stabilization pond facilities in which stabilization ponds are the primary process used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria. Effluent Set 3 in §309.4 of this title is considered equivalent to secondary treatment for stabilization pond systems.

(e) Discharge to an evaporation pond. Effluent discharged to evaporation ponds must receive, at a minimum, primary treatment, be within the pH limits of 6.0 - 9.0 standard units, and have a quality of 100 milligrams per liter (mg/l) five-day biochemical oxygen demand or less on a grab sample. For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(f) Land application [disposal] of treated effluent. The commission may authorize land application [disposal] of treated effluent when the applicant demonstrates that the quality of water [ground or surface waters] in the state will not be adversely affected. Each project must be consistent with laws relating to water rights. The primary purpose of such a project must be to dispose of treated effluent and/or to further enhance the quality of effluent prior to discharge. For the purpose of this subsection, primary treatment means solids separation which is typically

accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(1) When irrigation systems ultimately dispose of effluent on land to which the public has access, Effluent Set 4 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. When irrigation systems ultimately dispose of effluent on land to which the public does not have access [lands to which the public does not have access are to be used for ultimate disposal of effluent], the effluent must, at a minimum, receive primary treatment and [.] Effluent Set 5 in §309.4 of this title, at a minimum, shall apply and the pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. [For irrigation systems, primary treatment is the same as described in subsection (e) of this section.] Effluent may be used for irrigation only when consistent with Subchapters B and C of this chapter (relating to Location Standards and Land Application [Disposal] of Sewage Effluent).

(2) When overland flow systems are utilized for effluent treatment, the public shall not have access to the treatment area.

(A) For land application permits, primary [Primary] treated effluent meeting Effluent Set 6 in §309.4 of this title, within the pH limits of 6.0 - 9.0 standard

units may be used consistent with environmental safeguards and protection of water in the state [ground and surface waters]. [For overland flow systems, primary treatment is the same as described in subsection (e) of this section.]

(B) For discharge permits, at [At] a minimum, Effluent Set 1 in §309.4 of this title shall apply to discharges from overland flow facilities except where more stringent treatment levels are required to meet water quality standards.

(3) When evapotranspiration beds, low pressure dosing, or similar soil absorption systems are utilized for on-site land application [disposal], the effluent shall, at a minimum, receive primary treatment and meet Effluent Set 7 in §309.4 of this title. Use of these on-site systems shall be consistent with environmental safeguards and the protection of water in the state [ground and surface waters. Primary treatment is the same as described in subsection (e) of this section].

(4) When subsurface area drip dispersal systems, or similar soil absorption systems ultimately dispose of effluent on land where there is the significant potential for public contact, as defined in §222.5 of this title (relating to Definitions), Effluent Set 4 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions.

(5) When subsurface area drip dispersal systems, or similar soil absorption systems ultimately dispose of effluent on land where there is the minimal potential for public contact, as defined in §222.5 of this title, Effluent Set 5 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions.

(6) Treated effluent may be land applied only when consistent with Subchapters B and C of this chapter. Use of subsurface area drip dispersal systems shall be consistent with environmental safeguards and the protection of water in the state [ground and surface waters].

[(7) For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.]

(g) Disinfection.

(1) Except as provided in this subsection, disinfection in a manner conducive to the protection of both public health and aquatic life shall be achieved on all domestic wastewater which discharges into water [waters] in the state. Any appropriate process may be considered and approved on a case-by-case basis.

(2) Where chlorination is utilized, any combination of detention time and chlorine residual where the product of chlorine ($[Cl_2]$ mg/l) X Time ([T] minutes) equals or exceeds 20 is satisfactory provided that the minimum detention time is at least 20 minutes and the minimum residual is at least 0.5 mg/l. The maximum chlorine residual in any discharge shall in no event be greater than four mg/l per grab sample, or that is necessary to protect aquatic life.

(3) On a case-by-case basis, the commission will allow chlorination or disinfection alternatives to the specific criteria of time and detention described in paragraph (2) of this subsection that achieve equivalent water quality protection. These alternatives will be considered and their performance standards determined based upon supporting data submitted in an engineering report, prepared and sealed by a licensed Texas [registered,] professional engineer. The report should include supporting data, performance data, or field tracer studies, as appropriate. The commission will establish effluent limitations as necessary to verify disinfection is adequate, including chlorine residual testing, other chemical testing, and bacteria testing as specified in subsection [subsections] (h) or (i) of this section.

(4) Except as provided in this subsection [herein], disinfection of domestic wastewater which is discharged by means of land application [disposal] or evaporation pond shall be reviewed on a case-by-case basis to determine the need for

disinfection. All effluent discharged to land to which the public has access must be disinfected and if the effluent is to be transferred to a holding pond or tank, the effluent shall be rechlorinated to a trace chlorine residual at the point of irrigation application. All effluent discharged to land via a subsurface area drip dispersal system to which there is a potential for public contact shall be disinfected and shall comply with an *Escherichia coli* (*E. coli*) bacteria effluent limitation of 126 colony forming units per 100 milliliters of water or a fecal coliform effluent limitation of 200 colony forming units per 100 milliliters water, per grab sample, in accordance with paragraph (1) of this subsection.

(5) Unless otherwise specified in a permit, chemical disinfection is not required for stabilization ponds when the total retention time in the free-water-surface ponds (based on design flow) is at least 21 days.

(h) Effluent limitations for bacteria.

(1) To demonstrate the disinfection level in effluent discharged into water in the state by its wastewater treatment facility, a permittee shall measure the amount of bacteria in the effluent.

(A) [To demonstrate disinfection, *Escherichia coli* (*E. coli*)] must be the indicator bacteria measured for discharges to fresh water.

(B) [To demonstrate disinfection,] Enterococci [*Enterococci*] must be the indicator bacteria measured for discharges to salt water.

(2) The monthly average bacteria effluent limitation in a Texas Pollutant Discharge Elimination System (TPDES) permit must be the applicable geometric mean for the most stringent contact recreation category as specified in Chapter 307 of this title (relating to Texas Surface Water Quality Standards).

(3) The daily maximum bacteria effluent limitation in a TPDES permit must be the applicable single grab sample for the most stringent contact recreation category in Chapter 307 of this title.

(i) More stringent requirements. The commission may impose more stringent requirements in permits than those specified in subsections (a) - (h) of this section, on a case-by-case basis, where appropriate to maintain desired water quality levels or protect human health.

§309.4. Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants.

Figure: 30 TAC §309.4 contains the effluent limitations for domestic wastewater treatment plants. [This table contains the sets of effluent criteria for waste discharge permits.]

Figure: 30 TAC §309.4

[Figure: 30 TAC §309.4]

Table 1
Effluent Limitations for Domestic Wastewater Treatment Plants

Set	Direct Discharge	30-Day Average		7-Day Average		Daily Maximum		Single Grab		
		BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	DO MIN
1	Secondary treatment	20	20	30	30	45	45	65	65	2.0
2	Enhanced secondary treatment	10	15	15	25	25	40	35	60	4.0
3	Stabilization ponds	30	90	45	--	70	--	100	--	4.0
Land Treatment/ <u>Application</u> [Disposal]										
4	Irrigation (public exposure*) Subsurface area drip dispersal system (public contact**)	20	20	30	30	45	45	65	65	--
	Using stabilization ponds Subsurface area drip dispersal system using stabilization ponds (public contact**)	30	90	45	--	70	--	100	--	--

		30-Day Average			7-Day Average			Daily Maximum			Single Grab			DO MIN
		CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	
	Enhanced													
2N	Secondary with Nitrification	10	15	3	15	25	6	25	40	10	35	60	15	4.0
2N1	Secondary with Nitrification	10	15	2	15	25	5	25	40	10	35	60	15	4.0

Note: * - Public Exposure: The potential for the public to come into direct contact with treated effluent.
 ** - Public Contact: The potential for the public to come into contact with the soil over a dispersal zone, as defined in [30 TAC] §222.5 of this title (relating to Definitions).

SUBCHAPTER B: LOCATION STANDARDS

§§309.10 - 309.14

Statutory Authority

The amendments are adopted under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal

systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also adopted under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.10. Purpose, Scope, and Applicability.

(a) This subchapter [chapter] establishes minimum standards for the location of domestic wastewater treatment facilities. These standards are to be applied in the evaluation of an application for a permit to treat and dispose of domestic wastewater and for obtaining approval of construction plans and specifications. This subchapter [chapter] applies to domestic wastewater permit applications and construction plans

and specifications filed on or after October 8, 1990, for new facilities and substantial changes in the function or use of existing units [which undergo substantial change for the continued purpose of domestic wastewater treatment].

(b) The purpose of this subchapter [chapter] is to condition issuance of a permit and/or approval of construction plans and specifications for new domestic wastewater treatment facilities or the substantial change in the function or use of an existing unit on selection of a site that minimizes possible contamination of water in the state [ground and surface waters]; to define the characteristics that make an area unsuitable or inappropriate for a wastewater treatment facility; to minimize the possibility of exposing the public to nuisance conditions; and to prohibit issuance of a permit for a facility to be located in an area determined to be unsuitable or inappropriate, unless the design, construction, and operational features of the facility will mitigate the unsuitable site characteristics.

§309.11. Definitions.

The following words and terms, when used in this subchapter [chapter], shall have the following meanings, unless the context clearly indicates otherwise.

(1) Active geologic processes--Any natural process which alters the surface and/or subsurface of the earth, including, but not limited to, erosion (including

shoreline erosion along the coast), submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cutting, and earthquakes.

(2) Aquifer--A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Portions of formations, such as clay beds, which are not capable of yielding a significant amount of groundwater to wells or springs are not aquifers.

(3) Erosion--The group of natural processes, including weathering, deterioration, detachment, dissolution, abrasion, corrosion, wearing away, and transportation, by which earthen or rock material is removed from any part of the earth's surface.

(4) Existing facility--Any facility used for the storage, processing, or application [disposal] of domestic wastewater and which has obtained approval of construction plans and specifications as of March 1, 1990.

(5) New facility--Any domestic wastewater treatment facility which is not an existing facility.

(6) Nuisance odor prevention--The reduction, treatment, and dispersal of potential odor conditions that interfere with another's use and enjoyment of property

that are caused by or generated from a wastewater treatment plant unit, which conditions cannot be prevented by normal operation and maintenance procedures of the wastewater treatment unit.

(7) One hundred-year flood plain--Any land area which is subject to a 1.0% or greater chance of flooding in any given year from any source.

(8) Substantial change in the function or use--An increase in the pollutant load or modification in the existing purpose of the unit.

(9) Wastewater treatment plant unit--Any apparatus necessary for the purpose of providing treatment of wastewater (i.e., aeration basins, splitter boxes, bar screens, sludge drying beds, clarifiers, overland flow sites, treatment ponds or basins that contain wastewater, etc.). For purposes of compliance with the requirements of §309.13(e) of this title (relating to Unsuitable Site Characteristics), this definition does not include off-site bar screens, off-site lift stations, flow metering equipment, or post-aeration structures needed to meet permitted effluent minimum dissolved oxygen limitations.

(10) Wetlands--Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted

for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, playa lakes, and similar areas.

§309.12. Site Selection to [To] Protect Water in the State [Groundwater or Surface Water].

The commission may not issue a permit for a new facility or for the substantial change of an existing facility unless it finds that the proposed site, when evaluated in light of the proposed design, construction or operational features, minimizes possible contamination of water in the state [surface water and groundwater]. In making this determination, the commission may consider the following factors:

(1) active geologic processes;

(2) groundwater conditions such as groundwater flow rate, groundwater quality, length of flow path to points of discharge, and aquifer recharge or discharge conditions;

(3) soil conditions such as stratigraphic profile and complexity, hydraulic conductivity of strata, and separation distance from the facility to the aquifer and points of discharge to surface water in the state; and

(4) climatological conditions.

§309.13. Unsuitable Site Characteristics.

(a) A wastewater treatment plant unit may not be located in the 100-year flood plain unless the plant unit is protected from inundation and damage that may occur during that flood event.

(b) A wastewater treatment plant unit may not be located in wetlands. (This prohibition is not applicable to constructed wetlands.)

(c) A wastewater treatment plant unit may not be located closer than 500 feet from a public water well as provided by §290.41(c)(1)(B) of this title (relating to [Ground] Water Sources [and Development]) nor 250 feet from a private water well. The following separation distances apply to any facility used for the storage, processing, or application [disposal] of domestic wastewater. Exceptions to these requirements will be considered at the request of a permit applicant on a case-by-case basis, and alternative provisions will be established in a permit if the alternative condition provides adequate protection to potable water sources and supplies.[:]

(1) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs[, or soil absorption systems (including low pressure

dosing systems, drip irrigation systems, and evapotranspiration beds)] must be located a minimum horizontal distance of 150 feet from a private water well.[]]

(2) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of 500 feet from an elevated or ground potable-water storage tank as provided by §290.43(b)(1) of this title (relating to Water Storage [Location of Clear Wells, Standpipes, and Ground Storage and Elevated Tanks]).[];

(3) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of 500 feet from a public water well site as provided by §290.41(c)(1)(C) of this title, spring, or other similar sources of public drinking water.[]]

(4) A wet well or pump station at a wastewater treatment facility must be located a minimum horizontal distance of 300 feet from a public water well site, spring, or other similar sources of public drinking water as provided by §290.41(c)(1)(B) of this title.[]; and]

(5) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of

500 feet from a surface water treatment plant as provided by §290.42(a)(2)(A)
[§290.41(e)(3)(A)] of this title (relating to Water Treatment).

(d) A wastewater treatment facility surface impoundment may not be located in areas overlying the recharge zones of major or minor aquifers, as defined by the Texas Water Development Board, unless the aquifer is separated from the base of the containment structure by a minimum of three feet of material with a hydraulic conductivity toward the aquifer not greater than 10^{-7} cm/sec or a thicker interval of more permeable material which provides equivalent or greater retardation of pollutant migration. A synthetic membrane liner may be substituted with a minimum of 40 [30] mils thickness and an underground leak detection system with appropriate sampling points.

(e) One of the following alternatives must be met as a compliance requirement to abate and control a nuisance of odor prior to construction of a new wastewater treatment plant unit, or substantial change in the function or use of an existing wastewater treatment unit.[:]

(1) Lagoons with zones of anaerobic activity (e.g., facultative lagoons, un-aerated equalization basins, etc.) may not be located closer than 500 feet to the nearest property line. All other wastewater treatment plant units may not be located closer than 150 feet to the nearest property line. Land used to treat primary effluent is

considered a plant unit. Buffer zones for land used to dispose of treated effluent by irrigation shall be evaluated on a case-by-case basis. The permittee must hold legal title or have other sufficient property interest to a contiguous tract of land necessary to meet the distance requirements specified in this paragraph during the time effluent is disposed by irrigation.;

(2) The applicant must submit a nuisance odor prevention request for approval by the executive director. A request for nuisance odor prevention must be in the form of an engineering report, prepared and sealed by a licensed Texas professional engineer in support of the request. At a minimum, the engineering report shall address existing climatological conditions such as wind velocity and atmospheric stability, surrounding land use which exists or which is anticipated in the future, wastewater characteristics in affected units pertaining to the area of the buffer zone, potential odor generating units, and proposed solutions to prevent nuisance conditions at the edge of the buffer zone and beyond. Proposed solutions shall be supported by actual test data or appropriate calculations. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed.;

(3) The permittee must submit sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the

applicant. Sufficient evidence of legal restriction may, among others, take the form of a suitable restrictive easement, right-of-way, covenant, deed restriction, deed recorded, or a private agreement provided as a certified copy of the original document. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed.

(f) For a facility for which a permit application, other than a renewal application, is made after October 8, 1990, if the facility will not meet the buffer zone requirement by one of the alternatives described in subsection (e) of this section, the applicant shall include in the application for the discharge permit a request for a variance. A variance will be considered on a case-by-case basis and, if granted by the commission, shall be included as a condition in the permit. This variance may be granted by the commission, consistent with the policies set out in Texas Water Code, §26.003.

(g) Any approved alternative for achieving the requirements of this section [subsection] must remain in effect as long as the wastewater treatment plant is permitted by the commission. To comply with this requirement, the permittee must carry out the nuisance odor prevention plan at all times, shall ensure sufficient property ownership or interest and shall maintain easements prohibiting residential structures, as appropriate.

(h) For a permitted facility undergoing renewal of an existing permit with plans and specifications approved prior to March 1, 1990, for which no design change is requested, the facility will not be required to comply with the requirements of this section [subsection].

(i) Facilities for which plans and specifications have been approved prior to March 1, 1990, are not required to resubmit revised plans and specifications to meet changed requirements in this section in obtaining renewal of an existing permit.

§309.14. Prohibition of Permit Issuance.

(a) The commission may not issue, amend, or renew a permit for a wastewater treatment plant if the facility does not meet the requirements of §309.13 of this title (relating to Unsuitable Site Characteristics).

(b) Nothing in this chapter shall be construed to require the commission to issue a permit, regardless of whether [notwithstanding a finding that] the proposed facility would satisfy the requirements of §309.12 of this title (relating to Site Selection to [To] Protect Water in the State [Groundwater or Surface Water]) and [notwithstanding the absence of site characteristics which would disqualify the site from permitting pursuant to] §309.13 of this title [(relating to Unsuitable Site Characteristics)].

SUBCHAPTER C: LAND APPLICATION [DISPOSAL] OF SEWAGE EFFLUENT

§309.20

Statutory Authority

The amendment is adopted under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041,

which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendment is also adopted under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendment implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.20. Land Application [Disposal] of Sewage Effluent.

(a) Technical report. Each project shall be accompanied by a preliminary engineering report outlining the design of the wastewater application [disposal] system. The report shall include maps, diagrams, basis of design, calculations, and other pertinent data as described in this section.

(1) Location.

(A) Site map. A copy of the United States Geological Survey 7 1/2 minute topographic map or equivalent for renewals of the area which indicates the exact boundaries of the application [disposal] operation must [will] be included in the technical report. A map from the 7 1/2 minute series is required if it is published for the site area.

(B) Site drawing. A scale drawing and legal description of all land which is to be a part of the application [disposal] operation will be included in the technical report. The drawing must [will] show the location of all existing and proposed facilities to include: buildings, wastewater application [waste disposal] or treatment facilities, effluent storage and tail water control facilities, buffer zones, and water wells. This drawing must [should] have an index of wells, adjacent property, and other prominent features. Ownership of land tracts adjacent to the irrigated land shall be shown on the site drawing and identified by listing legal ownership.

(2) Geology. The existence of any unusual geological formations such as faults or sink holes on the wastewater application [waste disposal] site shall be noted in the technical report and identified on the site map. The conceptual design of the wastewater application [waste disposal] system shall include appropriate engineering considerations with respect to limitations presented by these features.

(3) Soils. A general survey of soils with regard to standard classifications shall be compiled for all areas of wastewater [waste] application to the soil. Soil surveys compiled by the United States Department of Agriculture Natural Resources [Soil] Conservation Service shall be utilized where available. Conceptual design aspects related to wastewater [waste] application rates, crop systems, seepage, and runoff controls shall be based upon the soil physical and chemical properties, hydraulic characteristics, and crop use suitabilities for the wastewater [waste] application site.

(4) Groundwater quality. The technical report shall fully assess the impact of the wastewater application [waste disposal] operation on the uses of local groundwater resources. In regard to performing this assessment, the report shall systematically address subparagraphs (A) and (B) of this paragraph.

(A) All water wells within a 1/2 mile radius of the application [disposal] site boundaries shall be located. If available, the water uses from each well shall be identified. In addition, aspects of construction such as well logs, casing, yield, static elevation, water quality, and age shall be furnished and evaluated in the technical report. Local groundwater resources below the wastewater application [disposal] site shall be monitored to establish preoperational baseline groundwater quality when monitoring wells are available. Monitoring shall provide the following

analytical determination: total dissolved solids, nitrate nitrogen, chlorides, sulfates, pH, and *Escherichia coli* [coliform] bacteria.

(B) Groundwater resources serving as sources or potential sources of domestic raw water supply will be protected by limiting wastewater application rates. Effluent storage and/or treatment ponds presenting seepage hazards to these groundwater resources shall be constructed with adequate liners.

(5) Agricultural practice. The technical report shall describe the crop system proposed for the wastewater application [waste disposal] operation. This description shall include a discussion of the adaptability of the crop to the particular soil, climatological, and wastewater sensitivity conditions that will exist at the wastewater application [waste disposal] site. Annual nutrient uptake of the crop system shall be specified, and crop harvesting frequencies shall be described within the report.

(b) Irrigation. Irrigation application [disposal] systems utilize effluent to supply the growth needs of the cover crop.

(1) Secondary effluent. Land application [disposal] system operators who use land accessible to the general public shall provide a degree of treatment equivalent to secondary treatment standards, as required by §309.3(f)(1) of this title (relating to

Application of Effluent Sets) [defined by the commission], prior to application of wastewater [waste] to land areas.

(2) Primary effluent. Land application [disposal] systems may provide for the application [disposal] of effluent from primary treatment units provided that the wastewater application [disposal] system conforms with the requirements contained in subparagraphs (A) - (E) of this paragraph.

(A) The wastewater application [disposal] system shall be designed and operated to prevent a discharge from entering surface water in the state [waters], and to prevent recharge of groundwater resources which supply or offer the potential of supplying domestic raw water.

(B) The land application [disposal] system shall be designed and operated to achieve application [disposal] of effluent without adversely affecting the agricultural productivity of the land application [disposal] site.

(C) The economic benefits derived from agricultural operations carried out at the land application [disposal] site are secondary to the proper application [disposal] of wastewater.

(D) The sewerage system owner shall maintain direct responsibility and control over all aspects of the sewage pretreatment and application operations, as well as all aspects of any agricultural activities carried out on the application [disposal] site.

(E) The land application [disposal] system shall contain sufficient area to provide for normal expansion of the facility service area. In most cases, the application [disposal] system shall have a design life of at least 20 years.

(3) Design analysis. The designing engineers shall utilize a detailed design analysis of limiting hydraulic and nutrient application rates, and effluent storage needs, as the basis of the application [disposal] system design. All projects shall include the detailed design analysis described in subparagraphs (A) - (C) of this paragraph.

(A) Hydraulic application rate. A water balance study shall be provided as a part of a detailed application rate analysis in order to determine the irrigation water requirement, including a leaching requirement if needed, for the crop system on the wastewater application areas. The water balance study should generally follow the example [development] shown in Table 1 in Figure: 30 TAC §309.20(b)(3)(B) [of this subparagraph]. Precipitation inputs to the water balance shall utilize the average yearly rainfall and the monthly precipitation distribution based on past

rainfall records. The consumptive use requirements (evapotranspiration losses) of the crop system shall be developed on a monthly basis. The method of determining the consumptive use requirement shall be documented as a part of the water balance study. A leaching requirement, calculated as shown in Table 1 of this subparagraph, shall be included in the water balance study when the total dissolved solids concentration of the effluent presents the potential for developing excessive soil salinity buildup due to the long term operation of the irrigation system.

[Figure: 30 TAC §309.20(b)(3)(A)]

(B) Effluent storage. An effluent storage study shall be performed to determine the necessary storage requirements. The storage requirements shall be based on a design rainfall year with a return frequency of at least 25 years (the expected 25 year-one year rainfall, alternately the highest annual rainfall during the last 25 years of record may be used) and a normal monthly distribution, the application rate and cycle, the effluent available on a monthly basis, and evaporation losses. An example of an effluent storage study is shown in Table 3 in Figure: 30 TAC §309.20(b)(3)(B) [of this subparagraph].

Figure: 30 TAC §309.20(b)(3)(B)

[Figure: 30 TAC §309.20(b)(3)(B)]

TABLE 1
 WATER BALANCE EXAMPLE
 (All Units are Inches of Water per Acre of Irrigated Area)

Month	a Avg. Precip.	b Average Runoff	Ri Average Infiltrated Rainfall	c Evapotrans- piration	d Required Leaching	Total Water Needs (5)+(6)	Effluent Needed in Root Zone (7)-(4)	e Evaporation from Reservoir surface	f Effluent to be applied to Land (8) /K	g Consumption from Reservoir (9)+(10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Jan.	2.11	0.40	1.71	0.80	0.00	0.80	0.00	0.02	0.00	0.02
Feb.	2.43	0.57	1.86	1.20	0.00	1.20	0.00	0.01	0.00	0.01
Mar.	2.02	0.36	1.66	2.80	0.20	3.00	1.34	0.09	1.58	1.67
April	3.19	1.03	2.16	3.40	0.22	3.63	1.46	0.05	1.72	1.77
May	4.19	1.74	2.45	6.10	0.64	6.74	4.29	0.10	5.05	5.15
June	3.30	1.10	2.20	6.50	0.76	7.26	5.06	0.20	5.95	6.15
July	2.20	0.45	1.75	6.70	0.87	7.57	5.82	0.34	6.85	7.19
Aug.	2.12	0.41	1.71	4.60	0.51	5.11	3.40	0.34	4.00	4.34
Sept.	3.58	1.30	2.28	5.10	0.50	5.60	3.32	0.19	3.91	4.10
Oct.	3.09	0.96	2.13	4.10	0.35	4.45	2.32	0.14	2.73	2.87

Nov.	2.23	0.46	1.77	2.10	0.06	2.16	0.39	0.07	0.46	0.53
Dec.	2.34	0.52	1.82	1.00	0.00	1.00	0.00	0.03	0.00	0.03
	32.80	9.30	23.50	44.40	4.11	48.51	27.40	1.58	32.25	33.83

- a. Up-to-date rainfall and evaporation data sets are available from the Texas Natural Resource Information System.
- b. Runoff should be determined by an acceptable method such as the Soil Conservation [soil conservation] Service method found in SCS Technical Release No. 55. For example [calculation] purposes only, a CN value of 74 was assumed for good pasture with Class "C" soils.
- c. Suggested source of values is the "Bulletin 6019, Consumptive Use of Water by Major Crops in Texas,"[,] Texas Board of Water Engineers.
- d. In low rainfall areas, this is the required leaching to avoid salinity build-up in the soil is calculated using the following equation [where]:

$$L = \frac{Ce (E-Ri)}{Cl-Ce} \quad [Ri = \text{Infiltrated Rainfall}]$$

Where:

Ce = Electrical Conductivity of Effluent [Cl = Maximum Allowable Conductivity]
 E = Evapotranspiration [of Soil Solution (Table 3)]

Ri = Infiltrated Rainfall

Cl= Maximum Allowable Conductivity of Soil Solution (Table 3)

For example purposes [Calculation purpose] only, a Ce value of [is measured to be] 1.5 millimhos/cm at 25°C and a Cl value of [is] 10.0 (Bermuda Grass) were used.

- e. Net Average Evaporation from Reservoir Surface. For example purposes only [the purpose of this calculation], irrigation area = 100 acres and reservoir surface area = 5 acres. Therefore, values are 5% of Evaporation figures of Austin, Texas.
- f. K is the irrigation efficiency. K value is 0.85 unless specific information is provided to support a different value.
- g. The total of this column is the maximum allowable application rate in acre-inch per acre per year [Acre-in./Ac./yr].

TABLE 2
 EXAMPLE CALCULATION OF STORAGE VOLUME REQUIREMENTS
 (All Units are Inches of Water per Acre of Irrigated Area)

Month	a Effluent Received for Application or Storage	b Rainfall <u>Highest</u> [Worst] Year in Past 25 Year	c Runoff <u>Highest</u> [Worst] Year in Past 25 Year	Infiltrated Rainfall (14) - (15)	Available Water (13) + (16)	d Net 25 Year Low Evaporation from Regur. Surf.	e Storage	f Accumulated Storage
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Jan.	2.70	3.28	1.09	2.19	4.89	0.00	2.69	8.49
Feb.	2.70	3.80	1.45	2.35	5.05	0.01	2.69	11.18
Mar.	2.70	3.18	1.02	1.26	4.86	0.04	1.67	12.85
April	2.70	4.98	2.35	2.63	5.33	0.02	1.51	14.36
May	2.70	6.57	3.67	2.90	5.60	0.04	-1.86	12.50
June	2.70	5.13	2.47	2.66	5.36	0.09	-2.80	9.70
July	2.70	3.44	1.20	2.24	4.94	0.16	-3.73	5.97
Aug.	2.70	3.33	1.12	2.21	4.91	0.16	-0.87	5.10
Sept.	2.70	5.59	2.84	2.75	5.45	0.08	-0.74	4.36
Oct.	2.70	4.82	2.22	2.60	5.30	0.07	0.45	0.45
Nov.	2.70	3.49	1.23	2.26	4.96	0.03	2.67	3.12
Dec.	2.70	3.64	1.34	2.30	5.00	0.02	2.68	5.80
	32.40	51.25	22.00	29.25	61.65	0.73		

a. For example [calculation] purposes only, disposal rate is for a 240,000 gpd facility (2.7 acre-feet per acre per year [Ac.-ft./AC./yr.]) irrigating 100 acres. Maximum values for Column 13 are the value (total) of Column 11 divided by 12. Note that the values in Column 13 could be adjusted to allow for seasonal variation in effluent output.

- b. Annual rainfall amount from the highest [worst] year in past 25 years of data. Total rainfall is then distributed proportional to monthly averages.
- c. Using rainfall figures in Column 14, calculate runoff with the same method used in Column 3.
- d. Lowest annual evaporation in past 25 years from reservoir surface. Distribute annual value proportionally to monthly average evaporation expressed in inches per irrigated acre. For example purposes only [purpose of this calculation], irrigation area = 100 acres and reservoir surface area = 5 acres. Therefore, values in Column 18 are 5% of evaporation figures for Austin, Texas.
- e. Storage = [(13) - (18)]-{{(7)-(16)}/k}. If the term {{(7)-(16)}/k} is negative, then the value for storage = [(13)-(18)]. Irrigation efficiency is 0.85 unless specific information is provided to support a different value.
- f. To allow for the worst condition, the summation was started in October [Oct.] which gives a maximum storage requirement of 14.36 inches per irrigated [in./irrigated] acre or 120 acre-feet [Acre-feet].

TABLE 3
 Salt Tolerance of Various Crop Plants

Best growth yields of each crop would occur at a salinity level below the salinity range given.

Relatively Nontolerant	Moderately Salt Tolerant	Relatively Salt Tolerant	Highly Salt Tolerant
2.0 - 4.0	4.0 - 6.0	6.0 - 8.0	8.0 - 12.0
Field Crops			
Field bean Cowpeas Corn (field)	Sorghum (grain) Rye (grain) Castorbean Soybean	Cotton Sugar beet Wheat (grain) Oats (grain) Rice	Barley (grain) Rape
Forage Crops			
White clover Alsike clover Red clover Ladino clover Crimson clover Rose clover Burnet clover	Tall fescue Meadow fescue Orchard-grass Millet Sour clover Birdsfoot trefoil	Wheat-grasses Sudan grass Sweetclover Alfalfa Ryegrass Rye (hay) Wheat (hay) Oats (hay)	Alkali sacaton Bermuda grass Barley (hay) Rhodesgrass Blue grama Panicgrass

(C) Nitrogen application rate. Irrigation shall be limited to prevent excessive nitrogen application. The annual liquid loading shall not exceed that which would introduce more nitrogen than is annually required by the crop plus 20% volatilization. Values of crop nitrogen requirements shall be justified in the design report. The application rate shall be calculated by the formula in Figure: 30 TAC §309.20(b)(3)(C).

Figure: 30 TAC §309.20(b)(3)(C) (No change to the figure as it currently exists in TAC.)

$$L = \frac{N}{2.7C}$$

where,

L = annual liquid loading - feet/year

C = effluent nitrogen concentration - mg/l

N = annual crop requirement of nitrogen plus 20% volatilization - pound/acre/yr

(4) Soil testing. Representative soil samples shall be taken from the root zones of wastewater application sites to establish preoperational soil concentrations of pH, total nitrogen, potassium, phosphorus, and conductivity. Sampling procedures shall employ accepted techniques of soil science for obtaining representative analytical

results. Preoperational soil concentration of the parameters listed in this paragraph [Baseline values of the parameters specified in paragraph (3)(C) of this subsection] shall be furnished in the technical report. The project development shall provide for a minimum of one soil test annually from each wastewater application site for the duration of the application [disposal] system design life.

(5) Standard irrigation best management practices.

(A) Screening devices should be installed on all lift pump suction intakes.

(B) The design of sprinkler irrigation systems should allow operational flexibility and efficiency and ease of maintenance.

(i) The system should be designed to provide a uniform water distribution.

(ii) The designing engineer should consider such items as permanently buried mains with readily accessible valve boxes, two or more lateral lines, and quick coupling valves at the main/lateral connections.

(iii) Cross connection with a potable water supply system is prohibited. Cross connection with a well water system will be reviewed on a case-by-case basis.

(C) Vehicular access to conveyance system locations and equipment should be provided at intervals of 1,000 feet to 1,300 feet.

(D) The cover crop of each wastewater application area shall be harvested a minimum of once per year. Consideration should be given to the selection of crops which will allow two or more harvests per year to be made.

(E) All effluent applied as irrigation water should have a pH within the range of 6.0 to 9.0.

(c) Percolation. Percolation application [disposal] systems provide for ultimate application [disposal] of the wastewater by evaporation and percolation with no resulting discharge to surface water in the state [waters].

(1) Percolation systems will not be permitted in those locations where seepage would adversely affect the uses of groundwater resources.

(2) Primary treatment of the raw sewage shall be provided prior to land application [disposal].

(3) Percolation systems shall be limited to sites having soil textures suitable for sustaining a rapid intake rate. Percolation dosing sites shall be limited to soils classified as sands, loamy sands, or sandy loams having a minimum infiltration rate of six inches per hour.

(4) Multiple dosing basins shall be provided for the application of wastewater. The wastewater distribution system shall be designed to provide a maximum dosing period of 24 hours upon any individual dosing basin and a minimum resting period for any individual dosing basin of five days following a period of dosing.

(5) The hydraulic loading rate will be considered on a case-by-case basis. The designing engineer shall identify the permeability of the limiting soil layer.

(6) The design shall provide an area equal to a minimum of 20% of the total application [disposal] site area for the construction of wastewater storage for use [utilization] during periods of wet or freezing weather and to provide flexibility of dosing site use [utilization].

SUBCHAPTER D: BENEFICIAL REUSE CREDIT

§§309.21 - 309.25

Statutory Authority

The new sections are adopted under the Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041,

which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The new sections are also adopted under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.21. Purpose, Scope, and Applicability.

(a) This subchapter provides for a beneficial reuse credit that may be used to account for beneficial reuse of treated wastewater for land application calculations. This subchapter establishes requirements for obtaining a beneficial reuse credit and requirements that apply to an entity who holds a permit that includes a beneficial reuse credit.

(b) This subchapter applies to an entity who applies for a Texas Land Application Permit (TLAP) under Chapter 305 of this title (relating to Consolidated Permits) to dispose of domestic wastewater if the application proposes a beneficial reuse credit. This subchapter also applies to an entity who holds a TLAP that includes a beneficial reuse credit.

(c) This subchapter does not apply to:

(1) domestic wastewater treatment facilities permitted to discharge to water in the state under a Texas Pollutant Discharge Elimination System permit issued under Chapter 305 of this title; and

(2) industrial facilities.

(d) This subchapter does not allow an entity to discharge wastewater or reclaimed water into water in the state. For the purpose of this subchapter, a discharge from a user's pond or storage unit that is a direct result of a rainfall event is considered an unauthorized discharge. A permit issued that includes a beneficial reuse credit in accordance with this subchapter does not protect an entity from liability for unauthorized discharges.

§309.22. Definitions.

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Beneficial reuse credit--The amount by which the permitted flow can be reduced to calculate the required land application area for a Texas Land Application Permit.

(2) Firm reclaimed water demand--The amount of water that has been historically used by the permittee or water user for beneficial reuse.

(3) Reclaimed water--As defined in Chapter 210 of this title (relating to Use of Reclaimed Water).

(4) Total monthly volume--The sum of all water use data across users of the same type of water use (i.e. indoor use or outdoor use) for the same month.

(5) Total nitrogen--Nitrate-nitrogen plus ammonia-nitrogen plus organically bound nitrogen.

(6) User--As defined in Chapter 210 of this title (relating to Use of Reclaimed Water).

(7) Water use data--Recorded monthly amounts of water for uses allowed in a reclaimed water use authorization issued under Chapter 210 of this title (relating to Use of Reclaimed Water). Water use data may include the amount of potable water used if the user has a contractual agreement with the permittee to substitute reclaimed water for potable water for the same type of use indicated.

§309.23. Demonstrating Firm Reclaimed Water Demand.

(a) The applicant shall submit five years or more of consecutive water use data for each user, if available. If five years of data is not available, the applicant shall submit a minimum of two consecutive years of water use data for each user to demonstrate firm reclaimed water demand. Water use user data must be from the period immediately preceding the date the application is received.

(b) The applicant shall submit the total monthly volume of water used by users satisfying subsection (a) of this section for indoor use and outdoor use, respectively.

(c) Water use data can be for reuse conducted by either the applicant or reclaimed water users that have a contract with the applicant to reuse the applicant's reclaimed water. The contract must be for a minimum term of five years.

(d) Water use data must be for the same type of reclaimed water use proposed (for example, a user's landscape irrigation data may not be used to support the user's dust control or toilet flushing use).

(e) For each user, water use data must include:

(1) the amount of water used on a monthly basis;

(2) the type of use of the water at each site; and

(3) the number of acres irrigated at each site, if applicable.

(f) At the discretion of the executive director, a water user's data may not be counted toward the beneficial reuse credit if the executive director determines that the user's water data is unreliable due to the user's noncompliance with state laws, rules, or permit conditions within the five-year period immediately preceding the date the application is received.

(g) At the discretion of the executive director, an applicant may not be eligible for beneficial reuse credit if the applicant has been issued a violation that resulted in an enforcement case within the five-year period immediately preceding the date the application is received.

(h) At the discretion of the executive director, less than two years of water use data ~~Prospective or speculative reclaimed water use data may not~~ be used to calculate the beneficial reuse credit.

§309.24. Calculating and Using Beneficial Reuse Credit.

(a) For outdoor uses.

(1) For users with less than five years of water use data, the beneficial reuse credit is calculated as 80% of the lowest total monthly volume of water used.

(2) For users with five or more years of water use data, the beneficial reuse credit is calculated as 80% of the average of the three lowest total monthly volumes of water use data submitted for the five years prior to the date the application

is submitted. All users must have at least five consecutive years of data when taking the average of the lowest three months.

(b) For indoor uses.

(1) For users with less than five years of water use data, the beneficial reuse credit is calculated as 100% of the lowest total monthly volume of water used.

(2) For users with five or more years of water use data, the beneficial reuse credit is calculated as 100% of the average of the lowest three total monthly volumes of water use data submitted for the five years prior to the date the application is submitted. All users must have at least five consecutive years of data when taking the average of the lowest three months.

(c) When calculating the hydraulic application rate as described in §309.20(b)(3)(A) of this title (relating to Land Application of Sewage Effluent) or §222.83 of this title (relating to Hydraulic Application Rate) for subsurface area drip dispersal systems, the permitted flow may be reduced by the beneficial reuse credit.

(d) The size of the land application site area may not be reduced by more than 50% of the size required when calculating the hydraulic application rate using the permitted flow without the beneficial reuse credit.

(e) When calculating the required effluent storage as described in §309.20(b)(3)(B) of this title or §222.127 of this title (relating to Storage), the permitted flow may not be reduced by the beneficial reuse credit.

(f) For the purpose of recalculating the beneficial reuse credit and for renewing a permit, the executive director may accept water use data from users with less than two years of data on a case-by-case basis.

§309.25. Requirements.

(a) Application Requirements.

(1) The applicant must provide the executive director with a list of users and the type of use(s) for each user. For users that propose to use the reclaimed water for irrigation, the list must include the acreage and crop(s) irrigated for each irrigation area.

(2) The applicant must provide the executive director with a map showing the location of the water use sites at a scale specified by the executive director.

(3) The applicant must submit all water use data used to calculate firm reclaimed water demand.

(4) The executive director may request additional information as may be necessary for an adequate technical review of the application.

(5) For permits issued prior to the effective date of this subchapter, the permittee must apply for a permit amendment under Chapter 305 of this title (relating to Consolidated Permits) for approval of a new or approval of a change to an existing beneficial reuse credit.

(b) General Requirements.

(1) An applicant must receive authorization required by Chapter 210 of this title (relating to Use of Reclaimed Water) before applying for a beneficial reuse credit. The executive director may waive this requirement for a new facility if the executive director finds that the application contains all information required by §309.23 of this title (relating to Demonstrating Firm Reclaimed Water Demand). If a beneficial reuse credit is granted for a new facility, the permit must include:

(A) the requirements and conditions that apply to the regulated activity without considering the beneficial reuse credit, applicable from the date of

permit issuance until the permittee receives authorization for reclaimed water use under Chapter 210 of this title; and

(B) the requirements and conditions that apply after the permittee receives authorization for reclaimed water use under Chapter 210 of this title.

(2) A permittee and, to extent applicable, a user must maintain authorization under Chapter 210 of this title during the term of the Texas Land Application Permit.

(3) The term of a permit that includes a beneficial reuse credit may not exceed five years.

(4) A permit that includes a beneficial reuse credit must include limits for both the permitted flow and the land application flow. The land application flow limit must be equal to the permitted flow limit minus the beneficial reuse credit.

(5) A permittee that is granted a beneficial reuse credit shall have a contractual agreement to dispose of unused treated effluent on an emergency basis, using the pump-and-haul method or another method approved by the executive director. The permittee shall use the contracted disposal method if all of the following conditions are met:

(A) a user of reclaimed water no longer needs the reclaimed water;

(B) a new user has not been contracted to accept the reclaimed water;

(C) the permitted facility does not have adequate capacity to store the unused reclaimed water; and

(D) additional application to the permitted land application area would exceed the permitted application rate or is otherwise prohibited by the permit.

(6) A permittee that is granted a beneficial reuse credit must meet a minimum of Type II effluent quality as described in §210.33 of this title (relating to Quality Standards for Using Reclaimed Water).

(c) Reporting Requirements.

(1) If the users or the irrigation areas change, the permittee must provide the executive director with an updated list of users and irrigations areas within 30 days after the change. A change in user or area is not an amendment to the permit.

(2) A permittee that is granted a beneficial reuse credit shall submit the following to the executive director by September 30th of each year for the reporting period of September 1st to August 31st:

(A) monthly data on the amount of reclaimed water used by each user;

(B) the type of water use(s) for each user;

(C) the acreage of each irrigation site, if applicable;

(D) the crop(s) irrigated at each irrigation site, if applicable;

(E) a recalculation of the beneficial reuse credit; and

(F) the total nitrogen concentration of the effluent.

(3) If the recalculated beneficial reuse credit submitted in the annual report is reduced, the executive director may require a permit amendment.

(4) The total nitrogen concentration of the effluent shall be tested quarterly by grab sample for the first year of the permit term, after which the frequency for testing may be reduced to annually upon approval by the executive director.

(5) The permittee shall submit monthly effluent reports to the executive director in accordance with the effluent limitations and monitoring requirements of the permit.

(6) The executive director may require additional limitations or more frequent testing on a case-by-case basis.

(2) Audit of records by the board. The board shall audit the records of pharmacists for verification of reported continuing education credit. The following is applicable for such audits: [-]

(A) upon [Uˈpən] written request, a pharmacist shall provide to the board documentation of proof for all continuing education contact hours reported during a specified license period(s). Failure to provide all requested records during the specified time period constitutes prima facie evidence of failure to keep and maintain records and shall subject the pharmacist to disciplinary action by the board; [-]

(B) credit [ˈkredɪt] for continuing education contact hours shall only be allowed for approved programs for which the pharmacist submits documentation of proof reflecting that the hours were completed during the specified license period(s). Any other reported hours shall be disallowed. A pharmacist who has received credit for continuing education contact hours disallowed during an audit shall be subject to disciplinary action; and [-]

(C) a [A] pharmacist who submits false or fraudulent records to the board shall be subject to disciplinary action by the board.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Executive Director

Texas State Board of Pharmacy

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For further information, please call: (512) 305-8010



TITLE 30. ENVIRONMENTAL QUALITY

PART 1. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHAPTER 222. SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes amendments to §§222.1, 222.3, 222.5, 222.31, 222.33, 222.73, 222.75, 222.81, 222.83, 222.85, 222.87, 222.115, 222.119, 222.127, 222.157, 222.159, and 222.163.

Background and Summary of the Factual Basis for the Proposed Rules

On March 14, 2016, the commission received a petition from the City of Austin (petitioner). The petitioner requested that the commission initiate rulemaking to amend 30 TAC Chapters 222 and 309 (Project Number 2016-033-PET-NR). The rulemaking would allow permittees and applicants to rely on the beneficial reuse of treated wastewater when calculating the amount of land required for disposal of treated wastewater. This would allow permittees and applicants to reduce the acreage dedicated for land application that is currently required by rule. The commission approved the petition to initiate rulemaking with stakeholder involvement. The executive director held a stakeholder meeting on August 9, 2016 and the public was invited to comment on the petition. The

public comment period was from August 28, 2016 through October 28, 2016.

Based on information presented at the stakeholder meeting, the executive director understands that the petition was made in response to increasing demands on water supplies and decreasing availability of contiguous or neighboring tracts of land that are large enough for domestic wastewater disposal under the commission's current rules. This trend is currently appearing in parts of Central Texas where wastewater discharge to water in the state is restricted by the commission's rules and land application of treated wastewater is the only permissible disposal option. The executive director recognizes that land availability may also be limited in other parts of the state, and that practicable land application options are especially important wherever discharge to water in the state is restricted or infeasible.

The proposed revisions in this chapter, and the corresponding proposed revisions in Chapter 309, would allow a reduction in the acreage dedicated for land application of treated effluent by applying a "beneficial reuse credit" when calculating the disposal site area required. An applicant could also foreseeably request to use a beneficial reuse credit to increase the permitted flow without changing the disposal tract acreage or to change both the acreage and the permitted flow. The beneficial reuse credit will be based on the demonstrated firm reclaimed water demand. The effluent storage size required by Chapter 222 may not be reduced by the beneficial reuse credit. The proposed rulemaking would establish the criteria for demonstrating firm reclaimed water demand, the procedure for calculating and applying the beneficial reuse credit, and the requirements for a permittee who has been granted a beneficial reuse credit. The proposed amendments correct inaccurate or outdated references to TAC or provide additional clarity.

Section by Section Discussion

The commission proposes to amend Chapter 222 to replace the term "waste" with "wastewater" throughout to clarify that regulations in this chapter apply to wastewater.

The commission proposes to amend Chapter 222 to update references to ensure current and accurate cross-references, improve readability, improve rule structure, and use consistent terminology. These changes are non-substantive and are not specifically discussed in the Section by Section Discussion of this preamble (i.e., §§222.1, 222.3, 222.73, 222.75, 222.87, 222.115, 222.119, and 222.163).

§222.5, Definitions

The commission proposes §222.5(2) to define "Beneficial reuse credit" as the term is proposed to be defined in Chapter 309 for consistency and to establish usage of the term as it relates to proposed §222.83(d) and (e) and §222.127(c). The commission proposes to renumber the subsequent paragraphs accordingly to accommodate the proposed definition.

The commission proposes to amend the definition of "Domestic waste" in renumbered §222.5(5) to include a reference to 30 TAC §210.82 to clarify the term "Graywater" used in the definition.

The commission proposes to amend the definition of "Industrial waste" in renumbered §222.5(14) to correct the term to "Industrial wastewater" and clarify the term to be more consistent with the definition in 30 TAC §312.8.

The commission proposes to amend the definition of "Public contact" in renumbered §222.5(20) to replace the existing definition

with language similar to the definition of "Public contact site" in §312.8 to prevent ambiguity and for consistency.

§222.31, *Application Process*

The commission proposes to amend §222.31(a) to remove reference to systems that did not have a permit prior to the adoption of the rules as this reference is obsolete.

The commission proposes to remove §222.31(b) and (c) since the references are obsolete. Subsurface area drip dispersal system facilities that held permits prior to July 31, 2006, have applied for permits under this chapter and therefore these subsections are obsolete. The commission proposes to re-letter the subsequent subsections accordingly to accommodate the proposed deletions.

The commission proposes to amend relettered §222.31(d) to remove redundant language.

The commission proposes to amend §222.31(l)(6) to change "poor performer" to "unsatisfactory performer" to be consistent with the definition in §60.2(g)(2) and correct the reference from §60.3 to §60.2.

§222.33, *Public Notice*

The commission proposes to delete §222.33(a) to remove redundancy.

§222.81, *Buffer Zone Requirements*

The commission proposes to amend §222.81(a)(2) to remove the reference to §309.13(c)(1) as the reference is not necessary.

§222.83, *Hydraulic Application Rate*

The commission proposes §222.83(d) to allow the beneficial reuse credit to be used when calculating the disposal area required based on the hydraulic application rate. The applicant, if granted a beneficial reuse credit by the executive director in accordance with Chapter 309, Subchapter D (Beneficial Reuse Credit), may reduce the permitted wastewater flow volume by the beneficial reuse credit when calculating the disposal area required based on the hydraulic application rate. This allows a person to reduce the required size of the disposal site. An applicant could also foreseeably request to use a beneficial reuse credit to increase the permitted flow without changing the disposal tract acreage or to change both the acreage and the permitted flow.

The commission proposes §222.83(e) to prohibit reducing the disposal site area by more than 50% of the area required based on the permitted flow. The applicant must have a disposal site area that can receive at least 50% of the permitted flow, even if 100% of the effluent is used as reclaimed water. If an applicant who was granted a beneficial reuse credit in a previous permit action requests an increase in permitted flow, they must still satisfy this requirement. This requirement provides a reasonable margin of safety against unauthorized discharges (e.g., if a user is not able to accept reclaimed water).

§222.85, *Effluent Quality*

The commission proposes to amend §222.85(b)(1) to remove redundant language.

§222.127, *Storage*

The commission proposes §222.127(c) to prohibit the reduction of the required storage. Effluent storage is especially necessary if the disposal site acreage has been reduced by the beneficial

reuse credit and the amount of reclaimed water distributed to users declines. Not allowing reductions in effluent storage provides an extra safety measure against unauthorized discharges (e.g., if a user is not able to accept reclaimed water).

§222.157, *Soil Sampling*

The commission proposes to amend §222.157(c) to remove "or extractable" to provide clarity. Acceptable methods that use extractions make it possible to report nutrients on a plant-available basis, which is more meaningful for calculating soil nutrient balances.

§222.159, *Operator Licensing*

The commission proposes to remove §222.159(d) because the compliance period has passed, and all facilities are required to meet the requirement.

Fiscal Note: Costs to State and Local Government

Jené Bearse, Analyst in the Budget and Planning Division, determined that for the first five-year period the proposed rules are in effect, no significant fiscal implications are anticipated for the agency or for other units of state or local government as a result of administration or enforcement of the proposed rules.

The rulemaking is proposed in order to allow permittees and applicants to rely on the beneficial reuse of treated wastewater when calculating the amount of land required for disposal of treated wastewater. This would allow permittees and applicants to reduce the acreage dedicated for land application that is currently required by rule.

The state may see an insignificant increase in revenue because the rulemaking provides for a five-year permit instead of a ten-year permit; this would only apply to a very small subset of permits, Texas Land Application Permits with a beneficial reuse credit. The permit fee ranges from \$315 to \$2,050 depending on the size of facility and type of application.

Public Benefits and Costs

Ms. Bearse also determined that for each year of the first five years the proposed rules are in effect, the public benefit anticipated from the changes seen in the proposed rules will be the potential for a reduced demand on potable water supplies, increased land-use flexibility while protecting human health and the environment, and providing for local economic growth.

The proposed rules are not compulsory and are not expected to result in significant fiscal implications for businesses or individuals. The proposed rules establish requirements for obtaining and maintaining a beneficial reuse credit. Because the proposed rules are optional, it is assumed that a unit of local government or entity that would apply for the beneficial reuse credit would see a net benefit.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rules do not adversely affect a local economy in a material way for the first five years that the proposed rules are in effect.

Rural Community Impact Statement

The commission reviewed this proposed rulemaking and determined that the proposed rules do not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. The rulemaking would apply statewide

and have the same effect in rural communities as in urban communities.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rules for the first five-year period the proposed rules are in effect. The proposed rules are not compulsory and are not expected to result in significant fiscal implications for businesses or individuals. The proposed rules establish requirements for obtaining and maintaining a beneficial reuse credit. Because the proposed rules are optional, it is assumed that an entity that would apply for the beneficial reuse credit would see a net benefit.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rules do not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require a significant increase or decrease in fees paid to the agency. The proposed rulemaking does not create, expand, repeal or limit an existing regulation, nor does the rulemaking increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rules should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the rulemaking is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "Major environmental rule" as defined in that statute. Texas Government Code, §2001.0225 applies to major environmental rules, the result of which are to exceed standards set by federal law, express requirements of state law, requirements of delegation agreements between the state and the federal governments to implement a state and federal program, or rules adopted solely under the general powers of the agency instead of under a specific state law.

A "Major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The proposed rulemaking does not adversely affect, in a material way, the economy, a section of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The specific intent of the proposed rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency, including practices, techniques, and technologies that make water use more efficient, by allowing permittees and appli-

cants to rely on the beneficial reuse of treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for disposal of wastewater. The proposed rulemaking affects the same class of regulated entities, except that the entities may be able to reduce the dedicated land application acreage that is currently required by rule, which incentivizes and encourages wastewater permittees and applicants to reuse treated wastewater.

The proposed rulemaking modifies the state rules related to subsurface irrigation and land application of treated wastewater. This may have a positive impact on the environment, human health, or public health and safety; however, the proposed rulemaking will not adversely affect the economy, a sector of the economy, productivity, competition, or jobs within the state or a sector of the state. Therefore, the commission concludes that the proposed rulemaking does not meet the definition of a "Major environmental rule."

Furthermore, even if the proposed rulemaking did meet the definition of a "Major environmental rule," it is not subject to Texas Government Code, §2001.0225 because it does not meet any of the four applicable requirements specified in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225(a) applies only to a state agency's adoption of a "Major environmental rule" that: 1) exceeds a standard set by federal law, unless state law specifically requires the rule; 2) exceeds an express requirement of state law, unless federal law specifically requires the rule; 3) exceeds a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) is adopted solely under the general powers of the agency instead of under a specific state law.

In this case, the proposed rulemaking does not meet any of the four requirements in Texas Government Code, §2001.0225(a). First, this rulemaking does not exceed standards set by federal law. Second, the proposed rulemaking does not exceed an express requirement of state law, but rather meets the requirements under state law to adopt rules suggesting best management practices for achieving the highest practicable levels of water conservation and efficiency, and regulate more efficiently, the land disposal of treated wastewater by identifying practices, techniques, and technologies that make water use more efficient. Third, the proposed rulemaking does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program. Finally, the commission proposes the rulemaking under Texas Water Code, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271, 26.011, 26.027, 26.034, and 26.041. Therefore, the commission does not propose the rulemaking solely under the commission's general powers.

Written comments on the Draft Regulatory Impact Analysis may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

The commission evaluated the proposed rulemaking and performed an analysis of whether it constitutes a taking under Texas Government Code, §2007.043. The following is a summary of that analysis. The specific purpose of the proposed rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency by modifying TAC to allow permittees and applicants to rely on the beneficial reuse of treated wastewater as an ad-

ditional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for disposal of wastewater. The proposed rulemaking will substantially advance this stated purpose by adopting language intended to regulate more efficiently the land application of treated wastewater by incentivizing and encouraging wastewater permittees and applicants to reuse treated wastewater.

Promulgation and enforcement of the proposed rules will not be a statutory or constitutional taking of private real property. Specifically, the proposed rulemaking does not apply to or affect any landowner's rights in private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real property and reduce any property's value by 25% or more beyond that which would otherwise exist in the absence of the regulations. These actions will not affect private real property.

Consistency with the Coastal Management Program

The commission reviewed the proposed rules and found that they are neither identified in Coastal Coordination Act implementation rules, 31 TAC §505.11(b)(2) or (4), nor will they affect any action/authorization identified in Coastal Coordination Act implementation rules, 31 TAC §505.11(a)(6). Therefore, the proposed rules are not subject to the Texas Coastal Management Program.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Announcement of Hearing

The commission will hold a public hearing on this proposal in Austin on July 25, 2019, at 10:00 a.m. in Building E, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or (800) RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Ms. Kris Hogan, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to (512) 239-4808. Electronic comments may be submitted at: <https://www6.tceq.texas.gov/rules/ecomments/>. File size restrictions may apply to comments being submitted via the eComments system. All comments should reference Rule Project Number 2016-042-309-OW. The comment period closes on July 30, 2019. Copies of the proposed rulemaking can be obtained from the commission's website at http://www.tceq.texas.gov/rules/propose_adopt.html. For further information, please contact Rebecca Moore, Wastewater Permitting Section, at (512) 239-0058.

SUBCHAPTER A. GENERAL PROVISIONS

30 TAC §§222.1, 222.3, 222.5

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§222.1. Purpose and Scope.

The purpose of this chapter is to:

- (1) maintain the quality of fresh water in the state to the extent consistent with the public health and welfare and the operation of existing industries;
- (2) promote the beneficial reuse of commercial, industrial, and municipal wastewater [~~waste~~] for the economic development of the state, thereby reducing the demand on the state's supply of fresh water;
- (3) prevent underground injection that may pollute fresh water; and
- (4) require the use of all reasonable methods to implement this policy.

§222.3. Applicability.

(a) This chapter applies to any person who operates a wastewater [~~waste~~] dispersal system that:

- (1) injects processed commercial, industrial, or municipal wastewater effluent into the ground at a depth of not more than 48 inches; and

(2) spreads the wastewater [~~waste~~] over the area so that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded.

(b) This chapter does not apply to:

(1) wastewater disposal systems authorized under Chapter 285 of this title (relating to On-Site Sewage Facilities) and Texas Health and Safety Code (THSC), Chapter 366;

(2) disposal systems for oil and gas waste, tar sands, sulfur, brine from desalination plants, and hazardous waste as defined by THSC, §361.003;

(3) drainfields, leaching chambers, or other gravity trench systems;

(4) subsurface drip irrigation systems that do not meet the definition of "Subsurface [~~subsurface~~] area drip dispersal systems," as defined in §222.5 of this title (relating to Definitions); or

(5) systems regulated in §331.8 of this title (relating to Prohibition of Motor Vehicle Waste Disposal Wells and Large Capacity Cesspools).

§222.5. *Definitions.*

The definitions contained in Texas Water Code, §§26.001, 27.002, 28.001, and 32.003 apply to this chapter. The following words and terms, when used in this chapter, have the following meanings.

(1) Aquifer--As defined or amended under Chapter 331 of this title (relating to Underground Injection Control).

(2) Beneficial reuse credit--As defined by Chapter 309, Subchapter D of this title (relating to Beneficial Reuse Credit).

(3) [~~2~~] Buffer zone--The area between a subsurface area drip dispersal system boundary and surface water [~~waters~~] in the state, public and private [~~domestic~~] water wells [~~well~~], and springs.

(4) [~~3~~] Crop requirement--The amount of nutrients that must be present in order to ensure that the crop nutrient needs are met, while accounting for nutrients that may become unavailable to the crop due to absorption to soil particles or other natural causes.

(5) [~~4~~] Domestic wastewater [~~waste~~]--Waste and wastewater from humans and household operations that are discharged to a wastewater collection system or otherwise enters a treatment facility. This includes waterborne human waste and waste from domestic activities such as washing, bathing, and food preparation, including graywater (as defined or amended in §210.82 of this title (relating to Definitions and General Requirements)) and blackwater.

(6) [~~5~~] Emitter--A device designed to discharge into the soil, a small uniform flow of water at a constant rate.

(7) [~~6~~] Evapotranspiration--The water lost from an area through the combined effects of evaporation from the ground surface and transpiration from the vegetation.

(8) [~~7~~] Facility--All land and fixtures, structures, or appurtenances used for storing, processing, treating, or disposing of wastewater [~~waste~~], or for injection activities. A facility may consist of several storage, processing, treatment, disposal, or injection operational units.

(9) [~~8~~] Floodway--A channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the surface elevation more than one foot. Federal Emergency Management Agency [~~FEMA~~] maps are prima facie evidence of floodway locations.

(10) [~~9~~] Fresh water--As defined or amended under Texas Water Code, §27.002.

(11) [~~10~~] Groundwater--Subsurface water occurring in soils and geologic formations that are fully saturated year-round, seasonally, or intermittently.

(12) [~~11~~] Hazardous waste--Any solid waste identified or listed as a hazardous waste by the administrator of the United States Environmental Protection Agency in accordance with the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, 42 United States Code, §§6901 *et seq.*, as amended.

(13) [~~12~~] Hydrologic connection--The connection and exchange between surface water and groundwater.

(14) [~~13~~] Industrial wastewater [~~waste~~]--Wastewater generated in a commercial or industrial process. [~~Any non-domestic wastewater.~~]

(15) [~~14~~] Infiltration--The passage of water through the soil surface into the soil profile.

(16) [~~15~~] Licensed professional engineer--An individual licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the state [~~State~~] of Texas.

(17) [~~16~~] Licensed professional geoscientist--An individual licensed by the Texas Board of Professional Geoscientists in accordance with its requirement for professional practice in the state [~~State~~] of Texas.

(18) [~~17~~] Local government--An incorporated city, county, river authority, groundwater conservation district, or a water district or authority acting under Texas Constitution, Article III, §52 or Article XVI, §59.

(19) [~~18~~] Owner--The person, corporation, partnership, or other legal entity that owns or partially owns a facility or part of a facility, or that owns or partially owns the land on which a facility or part of a facility is located.

(20) [~~19~~] Public contact--Contact with the soil over the dispersal zone by persons engaged in activities not associated with wastewater disposal. [~~Significant dermal contact with soil.~~]

(21) [~~20~~] Recharge feature--Those natural or artificial features either on or beneath the ground surface at the site that provide or create a significant hydrologic connection between the ground surface and the underlying groundwater within an aquifer. Significant artificial features include, but are not limited to, wells and excavation or material pits. Significant natural hydrologic connections include, but are not limited to: faults, fractures, karst features, or other macro pores that allow direct surface infiltration; a permeable or shallow soil material that overlies an aquifer; exposed geologic formations that are identified as an aquifer; or a water course bisecting an aquifer.

(22) [~~21~~] Soil--The upper layer of the surface of the earth that serves as a natural medium for the growth of plants.

(23) [~~22~~] Subsurface area drip dispersal systems--A wastewater [~~waste~~] disposal system that injects processed commercial, industrial, or municipal wastewater [~~waste~~] into the ground at a depth of not more than 48 inches and spreads the wastewater [~~waste~~] over a large enough area that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded.

(24) [~~23~~] Surface water in the state--Water in the state as defined in Texas Water Code, §26.001(5), except that "groundwater, percolating or otherwise," is specifically excluded.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 14, 2019.

TRD-201901819

Robert Martinez

Director, Environmental Law Division

Texas Commission on Environmental Quality

Earliest possible date of adoption: July 28, 2019

For further information, please call: (512) 239-6812



SUBCHAPTER B. ADMINISTRATIVE PROCEDURES

30 TAC §222.31, §222.33

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§222.31. Application Process.

(a) An owner of a subsurface area drip dispersal system shall apply for a permit in accordance with the provisions of this section [fer

any subsurface area drip dispersal system that did not have an application for a subsurface area drip dispersal system permit that had been declared administratively complete or was authorized by a permit in effect at the time of the adoption of these rules].

[(b) A permittee who holds a valid permit for a subsurface area drip dispersal system issued prior to July 31, 2006, and who wishes to renew that permit shall apply for a permit according to the requirements of this chapter upon the expiration date of the current permit.]

[(e) A permittee who holds a valid permit for a subsurface area drip dispersal system issued prior to July 31, 2006, and who wishes to amend that permit shall apply for a permit amendment according to the requirements of this chapter.]

(b) [(4)] Application for a permit shall be made on forms provided by the executive director. Applicants shall comply with §§305.41, 305.43, 305.44, [305.46,] and 305.47 of this title (relating to Applicability; Who Applies; Signatories to Applications; [Designation of Material as Confidential;] and Retention of Application Data).

(c) [(e)] Upon receiving an administratively complete application for a permit, the executive director shall:

(1) inspect the location of the proposed subsurface area drip dispersal system to evaluate the local conditions and the probable effect of the subsurface area drip dispersal system;

(2) forward a copy of the permit application to the Texas Department of State Health Services for the purpose of soliciting comments on the application; and

(3) allow 30 days for the Texas Department of State Health Services to submit comments on the permit application.

(d) [(f)] The applicant shall submit an application that demonstrates compliance with the [technical] requirements set forth in this chapter [and shall demonstrate compliance with the requirements of Subchapter C of this chapter (relating to Siting Requirements and Effluent Limitations)].

(e) [(g)] The applicant shall include the site preparation plan in the permit application packet. The site preparation plan shall comply with the requirements of §222.75 of this title (relating to Site Preparation Plan).

(f) [(h)] The applicant shall provide such additional information in support of the application as may be necessary, as determined by the executive director, for an adequate technical review of the application.

(g) [(i)] Each applicant and permittee shall comply with §§305.61 and §§305.63 - 305.68 of this title (relating to Applicability; Renewal; Transfer of Permits; Renewal; Permit Denial,[:]; Suspension, and Revocation; Revocation and Suspension upon [Upon] Request or Consent; and Action and Notice on Petition for Revocation or Suspension).

(h) [(j)] The permittee must file the application for renewal of an existing permit no later than 180 days before the expiration date of the current permit. Upon request, the executive director may grant an exception to this requirement, but in no case may the executive director grant permission for applications to be submitted later than the expiration date of the existing permit.

(i) [(k)] Except as provided in §222.33 [§222.33(b)] of this title (relating to Public Notice), notice, public comment, and hearing on applications shall be conducted in accordance with commission rules governing individual permits issued under Texas Water Code (TWC), Chapter 26. Each permittee shall comply with §305.125 of this title (relating to Standard Permit Conditions).

(j) [(h)] A permittee who holds a valid permit for a subsurface area drip dispersal system under TWC [Texas Water Code], Chapter 26 issued prior to July 31, 2006, may apply for and be granted a variance from the site requirements and design criteria in this chapter, if the subsurface area drip dispersal system is:

- (1) not in need of repair;
- (2) not causing pollution as determined by the executive director;
- (3) not causing soil saturation or a build-up of waterborne constituents within the soil;
- (4) not prohibited by §213.8 of this title (relating to Prohibited Activities);
- (5) not prohibited by §331.8 of this title (relating to Prohibition of Motor Vehicle Waste Disposal Wells and Large Capacity Cesspools); and
- (6) the permittee is not a repeat violator or an unsatisfactory [poor] performer [or repeat violator] as defined in §60.2(f) and (g)(2) of this title (relating to Classification) [§60.3(a) of this title (relating to Use of Compliance History)] or has other compliance history issues that may indicate the lack of ability of the permittee to comply with the permit and commission rules.

(k) [(m)] The executive director may grant a period of up to three years, in accordance with §305.127(3)(A) of this title (relating to Conditions to be Determined for Individual Permits) to meet the requirements that were the basis for a denial of a variance to a permittee that applies for and is denied a variance, provided that the system meets the requirements in subsection (j) [(h)] of this section.

§222.33. *Public Notice.*

[(a)] For the purpose of public notices, subsurface area drip dispersal systems shall be subject to the same public notice provisions required for wastewater discharge permits described in §39.403(b)(2) of this title (relating to Applicability).]

[(b)] Applicants for subsurface area drip dispersal system permits shall comply with the regulations regarding public notice of applications for wastewater discharge permits found in Chapter 39 of this title (relating to Public Notice).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER C. SITING REQUIREMENTS AND EFFLUENT LIMITATIONS

30 TAC §§222.73, 222.75, 222.81, 222.83, 222.85, 222.87

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the au-

thority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§222.73. *Soil Evaluation.*

(a) The applicant shall conduct and submit, with the application, a soils evaluation to identify the soils associated with the proposed site. At least one profile hole per soil type must be included in the evaluation. The applicant shall use soil borings, where appropriate, for enhancement of the profile hole determinations. The profile holes used [utilized] in the site evaluation must be no more than five feet deep, or to the first continuous lateral lithic contact. The evaluation must include the following information:

- (1) total depth of the profile hole;
- (2) primary rooting depth;
- (3) secondary rooting depth;
- (4) horizon descriptions which shall include:
 - (A) depth of the horizon;
 - (B) soil texture;
 - (C) soil structure;
 - (D) soil color;
 - (E) mottling; and
 - (F) percent coarse fragments;
- (5) boundary descriptions (soil horizons);
- (6) restrictive horizons;

- (7) potential water bearing zones; and
- (8) active water bearing zones.

(b) The soil evaluation shall be performed by a licensed professional engineer or licensed professional geoscientist ~~or engineer~~.

§222.75. *Site Preparation Plan.*

The applicant shall develop and submit, with the permit application, a site preparation plan that illustrates how site preparation will alleviate potential site-specific limitations and ensure suitability for the subsurface area drip dispersal system ~~of wastewater~~. This plan must include the following if applicable:

- (1) a site plan to minimize rainfall run-on and maximize rainfall runoff from the dispersal zones;
- (2) design criteria to compensate for any restrictive horizons within the soil column;
- (3) soil importation with descriptions of the chemical and physical characteristics of the proposed import material; and
- (4) any planned removal of existing vegetation.

§222.81. *Buffer Zone Requirements.*

(a) The permittee must locate the subsurface area drip dispersal system a minimum horizontal distance of:

- (1) 500 feet from public water wells, springs, or other similar sources of public drinking water;
- (2) 150 feet from private water wells ~~as described in §309.13(c)(1) of this title (relating to Unsuitable Site Characteristics)~~; and
- (3) 100 feet from surface water ~~waters~~ in the state.

(b) The permittee ~~permittees~~ must locate the wastewater treatment plant unit in accordance with §290.41(c)(1)(B) of this title (relating to Water Sources) and §309.13(c) of this title (relating to Unsuitable Site Characteristics).

(c) Buffer variance.

(1) The executive director may grant a variance to a permittee operating a subsurface area drip dispersal system under an existing authorization issued prior to November 1, 2006, to continue the operation and use of any existing subsurface area drip dispersal system located within the buffer zones listed in this section provided that the system:

(A) is in compliance with the recharge feature plan required by §222.79 of this title (relating to the Recharge Feature Plan); or

(B) is certified by a licensed professional engineer or licensed professional geoscientist determining that the existing buffers will be protective of water quality.

(2) The permittee shall maintain documentation authorizing variances of buffer zones on-site ~~on site~~ for the duration of the permit and make it available to executive director staff ~~commission personnel~~ upon request.

(d) The permittee shall not locate a subsurface area drip dispersal system within a floodway. The permittee shall provide the source of all data for determination of the floodway locations and include a copy of the relevant Federal Emergency Management Agency (FEMA) flood map or the calculations and maps used where a FEMA map is not available.

§222.83. *Hydraulic Application Rate.*

(a) The permittee must demonstrate in the engineering report and ensure that the hydraulic application rate for a subsurface area drip dispersal system meets one of the following.

(1) The hydraulic application rate shall not exceed 0.1 gallons per square foot per day for a subsurface area drip dispersal system located west of the boundary shown in Figure 1 in paragraph (2) of this subsection, ~~Figure 1~~ and using a vegetative cover of non-native grasses that are over seeded with cool season grasses in the winter months (October - March) ~~shall not exceed 0.1 gallons per square foot per day~~.

(2) The hydraulic application rate for a subsurface area drip dispersal system located east of the boundary shown in Figure 1 of this paragraph or in any part of the state when the vegetative cover is any crop other than non-native grasses, the permittee shall use the ~~following~~ equations in Figure 2 or 3 of this paragraph to establish the rate.

Figure 1: 30 TAC §222.83(a)(2) (No change.)

Figure 2: 30 TAC §222.83(a)(2) (No change.)

Figure 3: 30 TAC §222.83(a)(2) (No change.)

(3) The applicant must calculate the hydraulic application rate for each month of the year. A monthly water balance is computed that includes soil moisture storage. Any available soil moisture is carried over to the next month. The maximum application rate is exceeded when the total hydraulic loading (rainfall and irrigation) exceeds the total of the available soil moisture storage, the actual water requirement of crop (inches per month), and leaching.

Figure: 30 TAC §222.83(a)(3) (No change.)

(4) The permittee may use an alternative method to calculate the hydraulic application rate with ~~the~~ approval from ~~of~~ the executive director.

(b) The nitrogen application rate for a subsurface area drip dispersal system must be calculated using the anticipated nitrogen concentration of wastewater effluent prior to land application.

(1) The permittee must calculate the allowable annual hydraulic loading rate based on nitrogen limits using the ~~following~~ equation in this paragraph.

Figure: 30 TAC §222.83(b)(1) (No change.)

(2) Upon request by the applicant, the executive director may approve other fractions of applied nitrogen removed based upon special conditions relating to a proposed site, if justified in the engineering report.

(c) The result obtained from calculation of the allowable annual hydraulic loading rate that is based upon nitrogen limits must be compared to the hydraulic loading rate that is based on crop need and soil water holding capacity in the figure in subsection (a)(3) of this section. The more restrictive of the two calculations will set the maximum hydraulic application rate.

(d) The volume of wastewater used when calculating the disposal area required based on the hydraulic application rate as described in this section may be reduced by the beneficial reuse credit, as calculated in accordance with Chapter 309, Subchapter D of this title (relating to Beneficial Reuse Credit) and approved by the commission.

(e) The disposal site area required may not be reduced by more than 50% of what the disposal site requirement would be using the permitted flow without the beneficial reuse credit.

§222.85. *Effluent Quality.*

(a) Protection of fresh water. The applicant must demonstrate that both surface and subsurface fresh water will not be polluted by the application of wastewater by the subsurface area drip dispersal system.

(b) Domestic wastewater [waste].

(1) The permittee shall maintain the pH of the effluent within the limits of 6.0 - 9.0 standard units immediately prior to dispersal [in accordance with §309.20(b)(5)(E) of this title (relating to Land Disposal of Sewage Effluent)], unless a specific variance is approved by the executive director based upon site-specific conditions.

(2) When a subsurface area drip dispersal system applies effluent on land where there is the potential for public contact with the soil, the permittee shall comply with Effluent Set 4 located in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants), or with more stringent effluent limitations prescribed by the executive director, if warranted to protect human health or [and] the environment.

(3) When a subsurface area drip dispersal system applies effluent on land where there is not the potential for public contact with the soil, the permittee shall comply with Effluent Set 5 located in §309.4 of this title, or with more stringent effluent limitations prescribed by the executive director, if warranted to protect human health or [and] the environment.

(4) Disinfection.

(A) Permittees applying treated effluent to land where there is the potential for public contact with the soil must disinfect the effluent prior to it entering the subsurface area drip dispersal system in accordance with §309.3(g) of this title (relating to Application of Effluent Sets).

(B) If the effluent is to be transferred to a holding pond or tank prior to dispersal, the permittee shall ensure that the effluent meets the relevant criteria of §222.87 of this title (relating to Effluent Limitations) at the time it enters the distribution system.

(C) Permittees are allowed to use ultraviolet disinfection systems only with effluent having a daily average five-day biochemical oxygen demand [(BOD₅)] concentration and total suspended solids concentration that are less than 20 milligrams per liter each.

(5) The permittee must comply with requirements other than those specified in this section, if determined by the executive director to be necessary to protect human health.

§222.87. *Effluent Limitations.*

(a) Domestic wastewater [waste]. The permittee shall comply with the effluent limitations in §309.3 and §309.4 of this title (relating to Application of Effluent Sets and Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) and any specific effluent limitations placed in the permit by the executive director.

(b) Industrial wastewater [waste].

(1) The permittee is prohibited from introducing the following wastes into a subsurface area drip dispersal system:

(A) characteristically hazardous wastes as determined in 40 Code of Federal Regulations (CFR) Part 261, Subpart C;

(B) listed hazardous wastes as defined in 40 CFR Part 261, Subpart D;

(C) wastes specifically prohibited for land disposal in 40 CFR Part 268, Subpart C; and

(D) wastes containing radioactive materials unless the permittee is authorized to store, process, and dispose of these wastes in compliance with the Atomic Energy Act of 1954 (as amended) or in compliance with the Texas Radiation Control Act.

(2) Effluent limitations.

(A) The permittee shall comply with the effluent limitations established by the executive director in an individual permit [permits].

(B) The permittee shall demonstrate compliance with technology-based effluent limitations by monitoring the effluent prior to introduction into the subsurface area drip dispersal system.

(C) If the soil pH is less than 6.5 standard units at a subsurface area drip dispersal system site, the permittee shall monitor certain trace elements, including phosphorus, fluoride, and heavy metals as specified by the executive director in the individual permit.

(D) Prior to disposal, the permittee shall ensure that the effluent from a treatment system meets Effluent Set 5, established in §309.4 of this title.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER D. DESIGN CRITERIA

30 TAC §§222.115, 222.119, 222.127

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§222.115. *Treatment System.*

(a) For the systems and processes used to provide treatment of domestic wastewater prior to the wastewater entering the subsurface area drip dispersal system the applicant shall use the design criteria in Chapter 217 of this title (relating to Design Criteria for Domestic Wastewater Systems) or Chapter 317 of this title (relating to Design Criteria Prior to 2008) as applicable [for Sewerage Systems].

(b) If using septic tanks as the treatment system, the applicant shall design, construct, and install the tanks in accordance with Chapter 285, Subchapter D of this title (relating to Planning, Construction, and Installation Standards for [o]f OSSFs).

(c) If using anaerobic biological reactors (ABRs) as the treatment system, the permittee must comply with the following criteria.

(1) The ABR must have a container that is a structural unit such as a concrete tank, or an earthen berm with a membrane liner [that] may be used for larger installations.

(A) The container must be designed for the internal and external stresses that may be placed on the container during fabrication and use.

(B) Materials used to construct an ABR structural container must meet the requirements for septic tanks in §285.32 of this title (relating to Criteria for Sewage Treatment Systems).

(C) Containers using compacted earthen berms must use a membrane of vinyl or other plastic with a minimum thickness of 40 mils as the waterproofing component.

(D) A cover is required unless a covering layer of gravel or other media is placed above the liquid level to present a dry surface.

(2) The ABR must have media that is inert, stable, of uniform size, and free of fines.

(A) Clean washed gravel, crushed rock, or plastic filter media made for trickling filter use is acceptable.

(B) Minimum media effective size must be one inch and the uniformity coefficient must be less than 3.0.

(3) The ABR must have a distribution system over the bottom of the ABR and a collection system near the top of the ABR.

(A) The piping for the distribution system must be constructed of pipe that:

(i) is class 200 or schedule 40 polyvinyl chloride (PVC);

(ii) meets ASTM International [American Standard Testing Material] (ASTM) Standards [standards] D-2241 or D-1785; and

(iii) has a one-inch [one inch] nominal diameter.

(B) The ABR must incorporate a sight well that allows monitoring the liquid level in the unit.

(C) The ABR must have a means to flush and remove excessive biomat buildup from the media.

(d) If using sand filters as the treatment system, the permittee shall use sand filters that have the following components and meet the following requirements.

(1) Sand filters must be contained in a structural unit designed for all internal and external stresses that may be placed on the containment device during fabrication and use such as:

(A) a septic tank unit that meets the requirements in Chapter 285, Subchapter D of this title;

(B) a poured in place concrete structure; or

(C) an earthen berm with an impermeable membrane liner that has a minimum thickness of 40 mils and an under-drain leak detection system.

(2) The permittee shall use a detention time of at least 24 hours for dosing to a sand filter at rates up to ten gallons per day per square foot.

(3) All sand filter containment devices shall provide sufficient freeboard above the filter surface to hold four dosing volumes.

(4) A sand filter must have a collection pipe system to collect the filtered effluent that meets the following requirements.

(A) The piping shall be arranged so that the maximum horizontal travel distance of water through the under-drain media is less than four feet.

(B) The collection piping and the drain pipe from the filter shall be sized to remove a filter dose volume from the filter within a ten-minute period.

(C) The ends of the collection lines shall be extended above the surface of the filter to allow aeration of the drained filter.

(D) The collection piping system shall be constructed of pipe that:

(i) is class 200 or schedule 40 PVC;

(ii) meets ASTM Standards [standards] D-2241 or D-1785; and

(iii) has a two-inch nominal diameter.

(E) The sand filter media must:

(i) be an inert, clean washed material that is free of fines, dirt, and organic material;

(ii) have an effective size and uniformity coefficient suitable for the design loading rate;

(iii) have a depth based on the effective grain size and the design effluent quality with coarse media requiring a greater media depth; and

(iv) be placed on top of a bottom drain media.

(F) The sand filter bottom media must:

(i) cover the effluent collection piping;

(ii) have an effective grain size from two to four times the effective grain size of the filter media; and

(iii) support the filter media, prevent washout, and hydraulic removal of the filter media.

(5) The surface distribution mechanism must distribute the liquid to be filtered over the surface of the filter in a uniform manner.

(A) If a filter receives the liquid by gravity, distribution shall be accomplished by troughs or channels using splash pads to reduce surface erosion.

(B) Pressure-dosed sand filters must have a distribution system that:

(i) provides even distribution of the liquid;

(ii) consists of a pipe network with discharge holes or spray nozzles; and

(iii) provides a uniform pressure at the discharge outlets.

(6) Loading rates and filter sizing must be designed to treat the specific characteristics of the incoming wastewater and the effluent quality.

(7) The loading rate shall be designed based on the influent qualities, the selected media, and the acceptable run time between filter media cleaning or replacement.

(e) The permittee must submit a design that specifies the minimum frequency for solids removal from the treatment system and the justification of the frequency based on the type of system and good engineering practice.

(f) The permittee shall design the treatment system with the capacity to process the peak flow from the wastewater producer. The following criteria shall be the basis to determine peak flow:

(1) wastewater design values will be determined in accordance with §217.32 of this title (relating to Organic Loadings and Flows for New Wastewater Treatment Facilities); or §317.4(a)(1) or (2) of this title (relating to Wastewater Treatment Facilities); or

(2) the peak flows of the particular wastewater [waste] generator when the wastewater [waste] generator has unusually high peak flows.

§222.119. Delivery Systems.

(a) The permittee shall ensure that piping materials used in delivering treated effluent from the treatment facility to the dispersal zones are [is] suitable for effluent and conform [conforms] to regulations as required by Chapter 217 of this title (relating to Design Criteria for Domestic Wastewater Systems) or Chapter 317 of this title (relating to Design Criteria Prior to 2008) as applicable [for Sewerage Systems].

(b) The permittee shall identify the piping materials by referring to the appropriate ASTM International [American Standard Testing Material], American National Standard Institute, or American Water Works Association specification numbers.

(c) A permittee shall use a multiple pump system for all systems requiring pumping of effluent to the dispersal zones.

(1) The permittee shall use pumps rated by the manufacturer for effluent disposal.

(2) The permittee shall use pumps that are each rated for at least 100% of the design flow.

(3) The permittee shall include the pumping capacity and pump head calculations in the plans and specifications.

(d) The permittee shall ensure that the pump discharge piping includes a check valve, union, and gate valve for each submersible pump installed.

(e) The permittee shall use piping and valves made of corrosion-resistant materials for applications subject to corrosive gases.

(f) If self-priming pumps are used for subsurface area drip dispersal systems, the permittee shall use pumps that meet at least the minimum requirements listed under §217.61 of this title (relating to Lift Station Pumps) or §317.3 of this title (relating to Lift Stations [Station Pumps]), with the exception that the pumps are not required to meet the solids-handling requirement.

(g) The permittee shall include a check and gate valve for each unit of the discharge piping for self-priming pumps.

§222.127. Storage.

(a) The applicant must design and install temporary storage that equals at least three days of the design flow of the facility for times when the subsurface area drip dispersal system is out of service due to an emergency or scheduled maintenance.

(b) In lieu of temporary storage, the executive director may approve an alternate method of disposing of effluent, if an alternate disposal plan is submitted by the applicant.

(c) The volume of wastewater used when calculating the required effluent storage as described in this section may not be reduced by the beneficial reuse credit.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER E. OPERATIONS AND MAINTENANCE

30 TAC §§222.157, 222.159, 222.163

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of waste or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facili-

ties, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of waste that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§222.157. *Soil Sampling.*

(a) The permittee shall take soil samples within the same 45-day time frame each calendar year.

(b) Laboratory analyses of the soil samples must be submitted to the executive director by September 1 following the sampling date.

(c) The plant nutrient parameters shall be analyzed on a plant available [or extractable] basis. The permittee shall provide annual soil analyses of the dispersal zones for the following substances:

(1) pH (sample consisting of two volumes of water to one volume of soil mixture), in standard units;

(2) conductivity (sample consisting of two volumes of water to one volume of soil mixture), reported in millimho per centimeter [(mmho/cm)];

(3) total Kjeldahl nitrogen [(TKN)]. Methods that rely on mercury as a catalyst are not acceptable;

(4) nitrate-nitrogen;

(5) plant-available potassium, reported on a dry-weight basis in milligrams per kilogram (mg/kg);

(6) calcium, reported on a dry-weight basis in mg/kg;

(7) magnesium [Magnesium], reported on a dry-weight basis in mg/kg;

(8) sulfur [Sulfur], reported on a dry-weight basis in mg/kg; [and]

(9) phosphorus, analyzed according to the Mehlich III procedure (the North American Proficiency Testing Program of the Soil Science Society of America) and reported on a dry-weight basis in mg/kg;

(10) sodium, reported on a dry-weight basis in mg/kg;

(11) salinity; and

(12) trace elements as specified in the individual permit.

(d) The permittee shall take samples in:

(1) the zero to 12-inch zone of the soil; and

(2) the 12- to 24-inch zone of soil in the disposal area.

(e) If soil conditions or weather preclude sampling within the time period required, the permittee may submit a request to sample at another time. The request must include justification for the schedule change and the replacement schedule.

(f) Alternate soil sampling depths and frequency may be approved by the executive director if the permittee demonstrates that the alternate depths and frequency sufficiently monitors nutrient levels.

(g) The permittee shall collect soil composite samples from each broadly defined soil characterization or texture, as defined by the United States Department of Agriculture.

(h) The permittee shall take at least one composite soil sample from each dispersal zone.

(i) The permittee must comply with any alternate sampling methods or schedules required by the executive director.

§222.159. *Operator Licensing.*

(a) The permittee shall ensure that the facility supplying treated domestic wastewater to the subsurface area drip dispersal system and the subsurface area drip dispersal system is operated by a chief operator holding a valid Class A, B, or C wastewater operator license as defined in Chapter 30 of this title (relating to Occupational Licenses and Registrations).

(b) The permittee shall ensure that all wastewater operators have been trained to operate the specific treatment system and subsurface area drip dispersal system for which they have responsibility.

(c) Records of operator training must be made available to executive director [agency] staff upon request.

~~[(d) Any subsurface area drip dispersal system that utilizes treated domestic effluent and that is permitted under Texas Water Code, Chapter 26 before November 1, 2007, will not be required to have a chief operator with at least a Class C wastewater operator license until November 1, 2008.]~~

§222.163. *Closure Requirements.*

(a) The permittee of a subsurface area drip dispersal system that is to be permanently discontinued or abandoned shall close the system under the standards set forth in this section.

(b) If the permittee removes all tanks, lines, and other equipment from the site, the permittee may:

(1) submit to the appropriate regional office a closure report prepared by the permittee that includes sufficient soil analyses to demonstrate that there is no soil contamination at the subsurface area drip dispersal system site; and

(2) omit the requirement to deed record the location of the closed subsurface area drip dispersal system as required by subsection (f) of this section.

(c) The permittee must conduct the closure according to a system closure plan that is prepared by or under the direct supervision of a licensed professional engineer or licensed professional geoscientist.

(d) The permittee must close the system in a manner that prohibits the movement of fluids into underground sources of drinking water, in compliance with §331.5 of this title (relating to Prevention of Pollution) and 40 Code of Federal Regulations §144.12, concerning Prohibition of Movement of Fluid into Underground Sources of Drinking Water.

(1) The permittee must remove all aboveground [above ground] tanks. The permittee may remove or empty, collapse in place, and cover with clean fill material any underground tanks.

(2) The permittee must cap and remove three feet of the end sections of pipes that convey wastewater [waste] between the pump house and the dispersal lines. The permittee must cut and cap pipes every 500 linear feet between the pump house and the dispersal field.

(3) The permittee shall remove all valves and plug the lines where the valves are located.

(e) If soil, gravel, sludge, liquids, or other materials associated with the system are contaminated, the material must be disposed or otherwise managed in accordance with Chapter 350 of this title (relating to Texas Risk Reduction Program) and all other applicable federal, state, and local regulations and requirements.

(f) The permittee must deed record the location of the closed subsurface area drip dispersal system in the deed records of the county in which the site is located.

(g) The permittee shall submit, within 60 days after closing the system, a closure report:

(1) that has been prepared by a licensed professional engineer or licensed professional geoscientist;

(2) that certifies that closure was in accordance with the requirements of this section and in a manner that will prevent pollution; and

(3) includes evidence of deed recordation.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Robert Martinez

Director, Environmental Law Division

Texas Commission on Environmental Quality

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For further information, please call: (512) 239-6812



CHAPTER 309. DOMESTIC WASTEWATER EFFLUENT LIMITATION AND PLANT SITING

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes amendments to §§309.1 - 309.4, 309.10 - 309.14, and 309.20; and new §§309.21 - 309.25.

Background and Summary of the Factual Basis for the Proposed Rules

On March 14, 2016, the commission received a petition from the City of Austin (petitioner). The petitioner requested that the commission initiate rulemaking to amend 30 TAC Chapters 222 and 309 (Project Number 2016-033-PET-NR). The rulemaking would allow permittees and applicants to rely on the beneficial reuse of treated wastewater when calculating the amount of land required for land application of treated wastewater. This would allow permittees and applicants to reduce the acreage dedicated for land application that is currently required by rule. The commission approved the petition to initiate rulemaking with stakeholder involvement. The executive director held a stakeholder meeting on August 9, 2016, and the public was invited to comment on the petition. The public comment period was from August 28, 2016 through October 28, 2016.

Based on information presented at the stakeholder meeting, the executive director understands that the petition was made in response to increasing demands on water supplies and decreasing availability of contiguous or neighboring tracts of land that are

large enough for domestic wastewater land application under the commission's current rules. This trend is currently appearing in parts of Central Texas where wastewater discharge to water in the state is restricted by the commission's rules and land application of treated wastewater may be the only permissible option. The executive director recognizes that land availability may also be limited in other parts of the state, and that practicable land application options are especially important wherever discharge to water in the state is restricted or infeasible.

The proposed revisions in this chapter and the corresponding proposed revisions in Chapter 222 would allow a reduction in the acreage required for land application of treated effluent by applying a "beneficial reuse credit" to reduce the flow when calculating the required land application area. An applicant could also request to use a beneficial reuse credit to increase the permitted flow without reducing the land application acreage or to use a beneficial reuse credit to reduce the acreage and increase the permitted flow. The beneficial reuse credit will be based on the demonstrated firm reclaimed water demand. The effluent storage size required by Chapter 309 may not be reduced by the beneficial reuse credit. Proposed new §§309.21 - 309.25 would establish the criteria for demonstrating firm reclaimed water demand, the procedure for calculating and applying the beneficial reuse credit, and the requirements for a permittee who has been granted a beneficial reuse credit. The proposed amendments correct inaccurate or outdated references to TAC or provide additional clarity.

Section by Section Discussion

The commission proposes to amend Chapter 309 to replace the term "disposal" with "land application" or "application" throughout to reflect that wastewater is beneficially applied and not just disposed of via land.

The commission proposes to amend Chapter 309 to replace the term "waste" with "wastewater" throughout to clarify that regulations in this chapter apply to wastewater.

The commission proposes to amend Chapter 309 to change surface water and groundwater to "water in the state" to be consistent with the definition of "water in the state" in Texas Water Code (TWC), §26.001.

The commission proposes to amend Chapter 309 to update references to ensure current and accurate cross-references, improve readability, improve rule structure, and use consistent terminology. These changes are non-substantive and may not specifically be discussed in the Section by Section Discussion of this preamble.

§309.3, *Application of Effluent Sets*

The commission proposes to amend §309.3(f)(2) to separate the existing paragraph (2) into §309.3(f)(2)(A) and (B) to make it clear when Effluent Set 1 and Effluent Set 6 apply.

The commission proposes to amend §309.3 to move §309.3(f)(7) to §309.3(f) to define primary treatment prior to use in subsection (f).

§309.10, *Purpose, Scope, and Applicability*

The commission proposes to amend §309.10 to replace the word "chapter" with the word "subchapter" throughout the section. The contents of the section are intended to apply to Subchapter B but not to Subchapters A and C.

§309.11, *Definitions*

The commission proposes to amend §309.11 to replace the word "chapter" with the word "subchapter" in the introductory paragraph. The terms defined in the section were not used in Subchapters A and C and were intended to apply in Subchapter B only. This change constrains applicability of the defined terms to Subchapter B, which also helps ensure clear understanding and applicability of terms defined and used in proposed Subchapter D.

§309.12, Site Selection To Protect Groundwater or Surface Water

The commission proposes to amend §309.12 to change the title from "Site Selection To Protect Groundwater or Surface Water" to "Site Selection to Protect Water in the State" to be consistent with the definition of water in the state in TWC, §26.001.

§309.13, Unsuitable Site Characteristics

The commission proposes to amend §309.13(c)(1) - (3) and (5) to clarify that the requirements apply to both surface and subsurface irrigation sites and to ensure consistency with the rules in 30 TAC Chapter 290 (Public Drinking Water). The rule applies to all wastewater irrigation systems, including the soil absorption systems identified in the existing rule.

The commission proposes to amend §309.13(d) to change the required thickness for a synthetic liner for a wastewater facility surface impoundment located above a recharge zone of a major or minor aquifer from 30 mils to 40 mils to be consistent with the requirements in 30 TAC Chapter 217 (Design Criteria for Domestic Wastewater Systems).

§309.20, Land Disposal of Sewage Effluent

The commission proposes to amend §309.20 to change the title from "Land Disposal of Sewage Effluent" to "Land Application of Sewage Effluent." The term "land application" clarifies that the section is for beneficial application of wastewater rather than disposal via land.

The commission proposes to amend §309.20 to move §309.20(b)(3)(B) before Figure: 30 TAC §309.20(b)(3)(A) to improve readability. The commission proposes to consolidate Tables 1 - 3 into the same figure, Figure: 30 TAC §309.20(b)(3)(B).

The commission proposes to amend §309.20(b)(4) to correct a reference to parameters listed in paragraph (3)(C) to instead reference the parameters listed earlier in the paragraph.

§309.21, Purpose, Scope, and Applicability

The commission proposes new §309.21(a) to state the purpose and scope of the proposed Subchapter D (Beneficial Reuse Credit).

The commission proposes new §309.21(b) to specify that the rules in the proposed subchapter apply to an entity who applies for or holds a Texas Land Application Permit (TLAP) for land application of treated domestic wastewater and is seeking to include a beneficial reuse credit in the permit. The proposed subchapter also applies to an entity who holds a permit that includes a beneficial reuse credit. Proposed Subchapter D is intended to give flexibility where discharge to water in the state is restricted by commission rules or is otherwise infeasible.

The commission proposes new §309.21(c)(1) to establish that the rules in the proposed subchapter do not apply to a facility that is authorized to discharge under a Texas Pollutant Discharge Elimination System (TPDES) permit issued under 30 TAC Chap-

ter 305 (Consolidated Permits). The executive director determined that since facilities authorized to discharge are not subject to the same land constraints as facilities that must dispose of their treated wastewater by land application, the proposed subchapter should not apply to facilities authorized to discharge.

The commission proposes new §309.21(c)(2) to establish that the rules in proposed Subchapter D do not apply to industrial facilities. The executive director determined that industries have flexibility through 30 TAC Chapter 210, Subchapter E (Special Requirements for Use of Industrial Reclaimed Water) that is not available to domestic wastewater treatment facilities which, by necessity, are bound to the populated areas they serve.

The commission proposes new §309.21(d) to clearly state that proposed Subchapter D does not allow the discharge of wastewater or reclaimed water to water in the state. The proposed language specifically states that a discharge from a pond or storage unit at the user's site directly resulting from rainfall events is considered an unauthorized discharge. This encourages a user to properly manage the reuse water they receive from the permittee. The proposed subchapter does not affect whether a discharge of wastewater or reclaimed water to water in the state is subject to applicable enforcement action under other law and rules.

§309.22, Definitions

The commission proposes new §309.22(1) and (2) to define "Beneficial reuse credit" and "Firm reclaimed water demand." The proposed definitions are necessary to establish the concept of the beneficial reuse credit proposed in Subchapter D. The beneficial reuse credit reduces the amount of flow used for calculating the required land application area. The firm reclaimed water demand is the amount of water used by the permittee or authorized users for beneficial reuse and is used to calculate the beneficial reuse credit.

The commission proposes new §309.22(3) to define "Reclaimed water" to establish usage of the term as it relates to proposed Subchapter D and maintain consistency with Chapter 210 (Use of Reclaimed Water).

The commission proposes new §309.22(4) to define "Total monthly volume" to clarify how to calculate the beneficial reuse credit in proposed §309.24.

The commission proposes new §309.22(5) to define "Total nitrogen" and establish the composition of the pollutant to be tested in the treated effluent as required in proposed §309.25(c), discussed later in this preamble.

The commission proposes new §309.22(6) to define "User" as the term is defined in Chapter 210 for consistency and to establish usage of the term as it relates to proposed Subchapter D.

The commission proposes new §309.22(7) to define "Water use data" to clarify that data used in demonstrating firm reclaimed water demand may be reclaimed water use data or potable water use data from a user who commits to substituting reclaimed water for existing potable water use.

§309.23, Demonstrating Firm Reclaimed Water Demand

The commission proposes new §309.23(a) to establish the requirement to submit five years of consecutive data for each user, if available, to demonstrate firm reclaimed water demand. If five years of data is not available, a minimum of two consecutive years of water use data is required. The executive director determined that at least two years of water data is necessary to

support a user's demand as firm. Data submitted must be from the period immediately preceding the date the application is received.

The commission proposes new §309.23(b) to require the applicant to report the total monthly volume of water used. The applicant shall segregate indoor uses and outdoor uses in the monthly volumes submitted. The executive director needs this information to determine the beneficial reuse credit.

The commission proposes new §309.23(c) to clarify that water use data submitted for establishing firm reclaimed water demand may be from water use by the applicant or from other users. Contractual agreements with users for reclaimed water must be for a minimum term of five years to reasonably ensure that the user intends to use reclaimed water for the five-year term of the permit.

The commission proposes new §309.23(d) to require water use data submitted for establishing firm reclaimed water demand to be for the same type of use proposed. For example, if a user commits to using reclaimed water instead of potable water for toilet flushing at a particular facility, then the water use data must be for toilet flushing at that facility.

The commission proposes new §309.23(e) to specify the requirements for water use data submitted for establishing firm reclaimed water demand for each user: the amount of water used, the type of use, and the number of acres irrigated, if for an outdoor use. The amount of water used and type of use is necessary for calculating the beneficial reuse credit, as discussed later in this preamble. The number of acres irrigated for outdoor uses is necessary for estimating the application rate of reclaimed water.

The commission proposes new §309.23(f) to provide that the executive director may exclude a user's water data if the executive director determines that the user's water data is unreliable due to the user's noncompliance with state laws, rules, or permit conditions within the five-year period immediately preceding the date the application is received.

The commission proposes new §309.23(g) to provide that the executive director may deny a beneficial reuse credit if the applicant has had a violation that resulted in an enforcement action in the five-year period immediately preceding the date the application is received. All permit applications are subject to a compliance history review, as stated in 30 TAC Chapter 60 (Compliance History). The proposed rule ensures the executive director the discretion to consider an applicant's compliance history when reviewing a request for a beneficial reuse credit.

The commission proposes new §309.23(h) to prohibit the use of prospective or speculative water use data when applying for a beneficial reuse credit. Users must be existing entities with historical water use data. Unbuilt entities or irrigation sites will not be considered when demonstrating firm reclaimed water demand, because the data are hypothetical and may not be reliable.

§309.24, Calculating and Using Beneficial Reuse Credit

The commission proposes new §309.24(a) to clarify the method for calculating beneficial reuse credit for outdoor uses. The commission proposes §309.24(a)(1) to clarify that, for users with less than five years of water use data, the beneficial reuse credit is calculated as 80% of the lowest single month of total outdoor water use. The commission proposes new §309.24(a)(2) to clarify that, for users with five or more years of water use data, it is

calculated as 80% of the average of the lowest three months of total outdoor water use. Water use for outdoor purposes can vary dramatically due to climate and weather, therefore using the lowest month or average of the lowest three months of total water use mitigates some of the seasonal variation in outdoor use. Calculating 80% of the lowest month or lowest three months of total water use provides an additional margin of safety for unforeseen changes in water use rates. Allowing the average of the lowest three months for users with five or more years of data encourages historic or more established users and provides a more accurate representation of their water use.

The commission proposes new §309.24(b) to clarify the method for calculating beneficial reuse credit for indoor uses. The commission proposes §309.24(b)(1) to clarify that, for users with less than five years of water use data, beneficial reuse credit is calculated as 100% of the lowest month of total water use.

The commission proposes new §309.24(b)(2) to clarify that, for users with five or more years of data, the beneficial reuse credit is calculated as 100% of the average of the lowest three months of total water use data. Water use for indoor purposes is not subject to the same degree of seasonal variation as outdoor use. Using the lowest month or average of the lowest three months of total water accounts for temporal variations, if present. For example, water use data for toilet flushing from a school building may decrease significantly during the summer months. Because indoor use is less variable than outdoor use, 100% of the lowest month or average of the lowest three months of total water use may be used in calculating the beneficial reuse credit. Allowing the average of the lowest three months for users with five or more years of data encourages historic or more established users and provides a more accurate representation of their water use.

The commission proposes new §309.24(c) to allow the beneficial reuse credit to be used when calculating the land application area required based on the hydraulic application rate. The applicant, if granted a beneficial reuse credit by the executive director, may reduce the permitted wastewater flow volume by the beneficial reuse credit when calculating the land application area required based on the hydraulic application rate for facilities that are regulated under Chapters 222 and 309. This allows an entity to reduce the required size of the land application site. An applicant could also foreseeably request to use a beneficial reuse credit to increase the permitted flow without changing the land application acreage or to change both the acreage and the permitted flow.

The commission proposes new §309.24(d) to prohibit reducing the land application site area by more than 50% of the area required based on the permitted flow. The applicant must have a land application site area that can receive at least 50% of the permitted flow, even if 100% of the effluent is used as reclaimed water. If an applicant who was granted a beneficial reuse credit in a previous permit action requests an increase in permitted flow, they must still satisfy this requirement. This requirement provides a reasonable margin of safety against unauthorized discharges (e.g., if a user is not able to accept reclaimed water).

The commission proposes new §309.24(e) to prohibit the reduction of the required storage. This applies to facilities that are regulated under Chapters 222 and 309. Effluent storage is especially necessary if the land application site acreage has been reduced by the beneficial reuse credit and the amount of reclaimed water distributed to users declines. Not allowing reductions in effluent storage provides an extra safety measure against unau-

thorized discharges (e.g., if a user is not able to accept reclaimed water).

The commission proposes new §309.24(f) to allow the use of water use data for a user with less than two years of data to recalculate the beneficial reuse credit during a permit renewal on a case-by-basis. Because changes in users do not require an amendment to the permit, the commission finds it appropriate to allow for newer users with less than two years of water use data to be included in the recalculation of the beneficial reuse credit during a renewal or in keeping track of their beneficial reuse credit.

§309.25, Requirements

The commission proposes new §309.25 to clarify the application requirements for an applicant seeking a beneficial reuse credit. Proposed new §309.25(a)(1) requires the applicant to provide a list of users and irrigation areas considered in demonstrating firm reclaimed water demand. For users that propose to use the reclaimed water for irrigation, the list must also include the acreage and crops irrigated at each irrigation site. The executive director needs this information for the public record and for review and enforcement of the beneficial reuse credit.

The commission proposes new §309.25(a)(2) to require the applicant to submit a map of users using the applicant's reclaimed water. The executive director needs this information for the public record and for review and enforcement of the beneficial reuse credit.

The commission proposes new §309.25(a)(3) to require the applicant to submit the water use data used to calculate firm reclaimed water demand. The executive director will review the water use data for accuracy and eligibility.

The commission proposes new §309.25(a)(4) to allow the executive director to require additional information as needed for reviewing the application. This may include additional information on firm reclaimed water demand users to provide the executive director with the information necessary to appropriately review the application.

The commission proposes new §309.25(a)(5) to require a permittee to apply for an amendment under Chapter 305 to obtain or change a beneficial reuse credit. For example, increasing the beneficial reuse credit to reduce the size of land application site would require a major amendment because it would make the permit less stringent by reducing the required land application area. Decreasing a beneficial reuse credit without decreasing the permitted flow would require a major amendment if it increases the required size of the land application site, potentially affecting adjacent landowners. Decreasing the beneficial reuse credit and the permitted flow by the same amount would require a minor amendment because this change would not result in less-restrictive permit conditions and would not affect adjacent landowners.

The commission proposes new §309.25(b)(1) to require an applicant to receive authorization in accordance with Chapter 210 before applying for a beneficial reuse credit. This requirement ensures that the applicant is an authorized provider of reclaimed water. The commission foresees that a new facility may be able to provide at least two years of data from proposed users and recognizes that a new facility would not be able to obtain authorization under Chapter 210 without an existing permit; therefore, the proposed rule provides that the executive director may temporarily waive the requirement to have a Chapter 210 authoriza-

tion if a new facility applicant provides the information required to demonstrate firm reclaimed water demand. The proposed rule requires the executive director to phase the permit for a new facility so that the beneficial reuse credit will not become effective until the applicant obtains the authorization required by Chapter 210.

The commission proposes new §309.25(b)(2) to require the permittee and users, as applicable, to maintain authorization under Chapter 210 during the term of the permit to which the beneficial reuse credit is applied. This requirement prevents unauthorized use of reclaimed water.

The commission proposes new §309.25(b)(3) to limit the wastewater permit term to five years if a beneficial reuse credit has been granted. This requirement results in a more frequent review of the water use data from authorized users and provides a more frequent assessment of the permit requirements, which helps to proactively ensure that a facility that relies on a beneficial reuse credit will be able to operate without causing or contributing to a discharge to water in the state.

The commission proposes new §309.25(b)(4) to require a permit that includes a beneficial reuse credit to specify both the permitted flow limit (the total flow the facility is permitted to treat) and the flow that may be land applied, which is equal to the permitted flow minus the beneficial reuse credit. Both flow limits are necessary to ensure protection of the environment because they are derived in different ways and are used for different purposes. For example, the permitted flow is based on wastewater generation estimates and is used for treatment facility design, but the land application limit is based on a hydraulic or nutrient application rate suitable for plant uptake during irrigation and is used to determine the required size of the land application site.

The commission proposes new §309.25(b)(5) to require a permittee that is granted a beneficial reuse credit to have a contractual agreement to pump and haul unused treated effluent and requires the applicant to dispose of excess wastewater under the contractual agreement if: a user no longer needs the reclaimed water, a new user has not been contracted to accept the unused reclaimed water, the storage capacity is not adequate to store the unused reclaimed water, and additional application to the permitted land application area would exceed the permitted application rate or is otherwise prohibited by the permit, such as when the ground is saturated or frozen. The permittee may use an alternate method of disposal previously approved by the executive director. This requirement provides a safety mechanism in case the amount of reclaimed water actually used is less than the firm reclaimed water demand demonstrated when calculating the beneficial reuse credit. A permittee who has been granted a beneficial reuse credit must remain compliant with the application rate authorized in the permit and is not authorized to discharge wastewater into water in the state, even if a reclaimed water user no longer accepts reclaimed water from the permittee.

The commission proposes new §309.25(b)(6) to require a permittee who is granted a beneficial reuse credit to meet the effluent quality standards for Type II reclaimed water, as described in §210.33 (Quality Criteria and Specific Uses for Reclaimed Water). This rule will require the effluent limits appropriate for Type II reclaimed water to be incorporated into the permit. Failure to meet the effluent limits is a permit violation that may be subject to enforcement action. These limits are necessary to protect human health and the environment.

The commission proposes new §309.25(c)(1) to require a permittee who has been granted a beneficial reuse credit to notify the executive director of any changes in users or irrigation areas within 30 days after the change. This requirement provides the commission with accurate information on the users of reclaimed water. A change in users or in areas used for outdoor use is not an amendment to the permit.

The commission proposes new §309.25(c)(2) to require a permittee that has been granted a beneficial reuse credit to maintain monthly data of the amount of reclaimed water used by each user, type of use for each site, acreage of each site for irrigation, crops irrigated at each irrigation sites, and total nitrogen concentration of the treated effluent. This data shall be sent to the executive director by September 30 of each year. The executive director will use the monthly reclaimed water use data, area of irrigation sites, crops irrigated and total nitrogen concentration of the treated effluent to determine whether the beneficial reuse credit is still appropriate and to verify that reclaimed water is not being over-applied on irrigation sites. The permittee shall also submit to the executive director a recalculation of the beneficial reuse credit by September 30 of each year. Recalculating the beneficial reuse credit with the most recent year of data will help the executive director determine whether the beneficial reuse credit is still appropriate. However, the recalculation of the beneficial reuse credit does not change the beneficial reuse credit or the required land application area in the permit unless the permit is amended. As described in proposed new §309.24(f), the permittee may use water use data from users with less than two years of data for recalculating the beneficial reuse credit on a case-by-case basis, but not to change the beneficial reuse credit.

The commission proposes new §309.25(c)(3) to state that if the recalculated beneficial reuse credit is reduced, the executive director may require a permit amendment. This allows the commission to amend permits as necessary to ensure that permits are protective of the environment.

The commission proposes new §309.25(c)(4) to establish the frequency of total nitrogen testing of the treated effluent. Total nitrogen shall be tested quarterly for the first year to provide a more comprehensive representation of the effluent quality. After the first year, total nitrogen may be sampled annually, upon approval of the executive director. Data on the total nitrogen concentration of the effluent, in conjunction with the amount of reclaimed water applied and the acreage of irrigation sites, allows the executive director to calculate the amount of nitrogen applied at outdoor use sites and determine whether nitrogen was over-applied.

The commission proposes new §309.25(c)(5) to require the permittee to submit their monthly effluent monitoring reports to the executive director. Currently, these reports are required to be maintained on site (for TLAPs) and be made available to commission staff upon request or during a permit action. The proposed rule would require permittees that have been granted a beneficial reuse credit to submit these monthly reports to the executive director, as is already required for TPDES permits. The proposed rule is necessary to verify that the permittee complies with §309.25(b)(6) pertaining to effluent quality.

Fiscal Note: Costs to State and Local Government

Jené Bearse, Analyst in the Budget and Planning Division, determined that for the first five-year period the proposed rules are in effect, no significant fiscal implications are anticipated for the

agency or for other units of state or local government as a result of administration or enforcement of the proposed rules.

The rulemaking is proposed to allow permittees and applicants to rely on the beneficial reuse of treated wastewater when calculating the amount of land required for land application of treated wastewater. This would allow permittees and applicants to reduce the acreage dedicated for land application that is currently required by rule.

The state may see an insignificant increase in revenue because the rulemaking provides for a five-year permit instead of a ten-year permit; this would only apply to a very small subset of permits, TLAPs with a beneficial reuse credit. The permit fee ranges from \$315 to \$2,050 depending on the size of facility and type of application.

Public Benefits and Costs

Ms. Bearse also determined that for each year of the first five years the proposed rules are in effect, the public benefit anticipated from the changes seen in the proposed rules will be the potential for a reduced demand on potable water supplies, increased land-use flexibility while protecting human health and the environment and providing for local economic growth.

The proposed rules are not compulsory and are not expected to result in significant fiscal implications for businesses or individuals. The proposed rules establish requirements for obtaining and maintaining a beneficial reuse credit. Because the proposed rules are optional, it is assumed that a unit of local government or entity that would apply for the beneficial reuse credit would see a net benefit.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rules do not adversely affect a local economy in a material way for the first five years that the proposed rules are in effect.

Rural Community Impact Statement

The commission reviewed this proposed rulemaking and determined that the proposed rules do not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. The rulemaking would apply statewide and have the same effect in rural communities as in urban communities.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rules for the first five-year period the proposed rules are in effect. The proposed rules are not compulsory and are not expected to result in significant fiscal implications for businesses or individuals. The proposed rules establish requirements for obtaining and maintaining a beneficial reuse credit. Because the proposed rules are optional, it is assumed that an entity that would apply for the beneficial reuse credit would see a net benefit.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rules do not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require a significant increase or decrease in fees paid to the agency. The proposed rulemaking does not create, expand, repeal or limit an existing regulation, nor does it increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rules should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225 and determined that the rulemaking is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "Major environmental rule" as defined in that statute. Texas Government Code, §2001.0225 applies to major environmental rules the result of which are to exceed standards set by federal law, express requirements of state law, requirements of a delegation agreements between state and the federal governments to implement a state and federal program, or rules adopted solely under the general powers of the agency instead of under a specific state law.

A "Major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The proposed rulemaking does not adversely affect, in a material way, the economy, a section of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The specific intent of the proposed rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency, including practices, techniques, and technologies that make water use more efficient, by allowing permittees and applicants to rely on the beneficial reuse of treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for land application of wastewater. The proposed rulemaking affects the same class of regulated entities, except that the entities may be able to reduce the dedicated land application acreage that is currently required by rule, which incentivizes and encourages wastewater permittees and applicants to reuse treated wastewater.

The proposed rulemaking modifies the state rules related to subsurface irrigation and land application of treated wastewater. This may have a positive impact on the environment, human health, or public health and safety; however, the proposed rulemaking will not adversely affect the economy, a sector of the economy, productivity, competition, or jobs within the state or a sector of the state. Therefore, the commission concludes that the proposed rulemaking does not meet the definition of a "Major environmental rule."

Furthermore, even if the proposed rulemaking did meet the definition of a "Major environmental rule," it is not subject to Texas

Government Code, §2001.0225 because it does not meet any of the four applicable requirements specified in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225(a) applies only to a state agency's adoption of a "Major environmental rule" that: 1) exceeds a standard set by federal law, unless state law specifically requires the rule; 2) exceeds an express requirement of state law, unless federal law specifically requires the rule; 3) exceeds a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) is adopted solely under the general powers of the agency instead of under a specific state law.

In this case, the proposed rulemaking does not meet any of the four requirements in Texas Government Code, §2001.0225(a). First, this rulemaking does not exceed standards set by federal law. Second, the proposed rulemaking does not exceed an express requirement of state law, but rather meets the requirements under state law to adopt rules suggesting best management practices for achieving the highest practicable levels of water conservation and efficiency, and regulate more efficiently, the land application of treated wastewater by identifying practices, techniques, and technologies that make water use more efficient. Third, the proposed rulemaking does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program. Finally, the commission proposes the rulemaking under TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271, 26.011, 26.027, 26.034, and 26.041. Therefore, the commission does not propose the rulemaking solely under the commission's general powers.

Written comments on the Draft Regulatory Impact Analysis may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

The commission evaluated the proposed rulemaking and performed an analysis of whether it constitutes a taking under Texas Government Code, §2007.043. The following is a summary of that analysis. The specific purpose of the proposed rulemaking is to adopt rules that identify best management practices that achieve the highest practicable level of water conservation and efficiency by modifying TAC to allow permittees and applicants to rely on the beneficial reuse of treated wastewater as an additional alternative means to dispose of a portion of its treated wastewater when calculating the amount of land required for land application of wastewater. The proposed rulemaking will substantially advance this stated purpose by adopting language intended to regulate more efficiently the land application of treated wastewater by incentivizing and encouraging wastewater permittees and applicants to reuse treated wastewater.

Promulgation and enforcement of the proposed rules will not be a statutory or constitutional taking of private real property. Specifically, the proposed rulemaking does not apply to or affect any landowner's rights in private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real property and reduce any property's value by 25% or more beyond that which would otherwise exist in the absence of the regulations. These actions will not affect private real property.

Consistency with the Coastal Management Program

The commission reviewed the proposed rulemaking and found the proposal is a rulemaking identified in the Coastal Coordination Act implementation rules, 31 TAC §505.11(b)(2) (Actions

and Rules Subject to the Coastal Management Program), and will, therefore, require that goals and policies of the Texas Coastal Management Program (CMP) be considered during the rulemaking process.

The commission reviewed this rulemaking for consistency with the CMP goals and policies in accordance with the regulations of the Coastal Coordination Advisory Committee and determined that the rulemaking will not affect any coastal natural resource areas because the rules only affect counties outside the CMP area and is, therefore, consistent with CMP goals and policies.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Announcement of Hearing

The commission will hold a public hearing on this proposal in Austin on July 25, 2019, at 10:00 a.m. in Building E, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or (800) RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Ms. Kris Hogan, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to (512) 239-4808. Electronic comments may be submitted at: <https://www6.tceq.texas.gov/rules/ecomments/>. File size restrictions may apply to comments being submitted via the eComments system. All comments should reference Rule Project Number 2016-042-309-OW. The comment period closes on July 30, 2019. Copies of the proposed rulemaking can be obtained from the commission's website at http://www.tceq.texas.gov/rules/propose_adopt.html. For further information, please contact Rebecca Moore, Wastewater Permitting Section, at (512) 239-0058.

SUBCHAPTER A. EFFLUENT LIMITATIONS

30 TAC §§309.1 - 309.4

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and

to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.1. *Scope and Applicability.*

(a) The purpose of this subchapter [these sections] is to promulgate a set of effluent quality limitations for treated domestic sewage which will be required of permittees as appropriate to maintain water quality in accordance with the commission's surface water quality standards. Any incorporation of federal regulations into this chapter shall apply only to disposal of domestic sewage.

(b) Secondary treatment, with exceptions applicable to certain stabilization pond systems and other natural systems, is defined as a minimum reduction of pollutants to meet the [following] quality specified in Figure: 30 TAC §309.1(b):
Figure: 30 TAC §309.1(b) (No change.)

(c) Effective April 1988, all permits containing an ammonia-nitrogen effluent limit are [hereby] modified to change Biochemical Oxygen Demand (BOD₅) [BOD₅] to carbonaceous biochemical oxygen demand (CBOD₅).

(d) Effective January 1, 1988, any permit containing a BOD₅ effluent limitation may be monitored and reported as CBOD₅ as long as nitrogen is monitored and reported as ammonia-nitrogen at the same sampling frequency. If the permit authorizes a discharge to land or an evaporation pond only, ammonia-nitrogen monitoring and reporting are not required to change to CBOD₅.

(e) The state [State] of Texas has established a state water quality management program and a continuing planning process which sets forth the strategy and procedures for accomplishing the management program's objectives. Essential elements of the program include updates of basin plans, total maximum daily loads, and wasteload evaluations by basin segments. In order to achieve compliance with water quality standards within certain segments, more stringent effluent quality limitations other than basic secondary treatment may be required to protect water quality.

§309.2. *Rationale for Effluent Sets.*

(a) The effluent sets in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) are

intended to represent standard levels of treatment normally required for domestic wastewater treatment plants.

(b) Modifications to the effluent sets [~~uniform sets of effluent criteria~~] listed in §309.4 of this title may be considered by the commission when effluent limits more stringent than secondary treatment are required in order to maintain desired water quality levels.

(c) On a case-by-case basis, modifications to the effluent sets [~~uniform effluent criteria~~] listed in §309.4 of this title may be considered by the commission for certain existing, natural systems which cannot consistently meet pH or total suspended solids (TSS) limitations [~~criteria~~] due to the inherent variability of a particular system. Modifications to the effluent sets [~~criteria~~] may be allowed for a natural system designed for treatment or polishing with a discharge directly into surface water in the state [~~waters~~]. Natural systems include, but are not necessarily limited to, aerated lagoons followed by stabilization ponds, facultative ponds, stabilization ponds, and constructed wetlands. For the purpose of this chapter, playa lakes are not considered natural systems. The commission will consider the following factors in approving a modification to the effluent sets [~~criteria~~]:

(1) Any modification shall not allow a discharge which would cause a violation of the commission's surface water quality standards or any applicable total maximum daily loads [(TMDLs)] or wasteload evaluation.

(2) A proposal for a modification must be supported by an engineering report, prepared and sealed by a licensed Texas [~~qualified~~] professional engineer representing the permit applicant, which justifies the request for modification with specific information relating to the proposed design and that design's inherent limitations. For considering a request for modification of an existing system that cannot achieve permitted pH or TSS limitations, the engineering report must also document past efforts of design modification, operation, and maintenance, and include data showing for the past three years, influent and effluent hydraulic and organic loadings and the resultant effluent quality achieved.

(3) The commission may set narrative effluent limitations and effluent monitoring requirements as an alternative to a specific numerical effluent limitation when a specific numeric effluent limitation cannot be met because of, but not limited to, seasonal or operational factors. These narrative requirements shall ensure that necessary operational and maintenance actions are consistently carried out by the permittee to meet applicable water quality standards. The commission may request resumption of the original numerical limitations during the next permit renewal or amendment [~~at the expiration of the permit~~] based on a review of the discharge effluent data.

(4) The commission may suspend setting a specific numerical effluent limitation for a temporary period of time not to exceed the remainder of the permit term, pending a review of the actual performance of a natural system's design as long as the facility meets paragraph (1) of this subsection. During any temporary suspension, the permittee must document that the system is operated and maintained for optimal performance in accordance with an operation and maintenance manual prepared in accordance with Chapter 217 of this title (relating to Design Criteria for Domestic Wastewater Systems) or Chapter 317 of this title (relating to Design Criteria Prior to 2008) as applicable [~~for Sewerage Systems~~] and is meeting water quality standards. After review of performance data and related information submitted by the permittee in a permit application, for [~~at time of~~] permit renewal or amendment, or when submitted at the request of the executive director, the commission may set specific numerical effluent limitations consistent with [~~the criteria of~~] this subchapter and the performance documented for the particular system.

§309.3. *Application of Effluent Sets.*

(a) Discharges into effluent limited segments.

(1) All discharges into effluent limited segments shall, at a minimum, achieve secondary treatment. An effluent limited segment is any segment which is presently meeting or will meet applicable water quality criteria following incorporation of secondary treatment for domestic sewage treatment plants and/or best practicable treatment for industries.

(2) New or increased discharges into effluent limited segments shall achieve that level of treatment deemed necessary by the commission, based on the assimilative capacity and uses of the receiving stream.

(b) Discharges into water quality impaired [~~limited~~] segments.

(1) All discharges into water quality impaired [~~limited~~] segments for which evaluations have been developed shall, at a minimum, achieve the treatment level specified in the recommendations of the evaluation for that discharge. An impaired [~~A water quality limited~~] segment is a surface water segment classified by the commission as water quality limited where conventional treatment of wastewater [~~waste~~] discharged to the segment is not stringent enough for the segment to meet applicable water quality standards; monitoring data have shown significant violations of water quality standards; advanced waste treatment for point sources is required to protect existing exceptional water quality; or the segment is a public domestic water supply reservoir used to supply drinking water.

(2) Discharges into water quality impaired [~~limited~~] segments for which wasteload evaluations or total maximum daily loads have not been developed shall, at a minimum, achieve secondary treatment as provided by §309.1 of this title (relating to Scope and Applicability).

(c) Discharges into certain reservoirs. Any discharge made within five miles upstream of a reservoir or lake which is subject to on-site/private sewage facility regulation adopted under Texas Water Code, Chapter 26 or Texas Civil Statutes, Article 4477-7e, or which may be used as a source for public drinking water supply shall achieve, at a minimum, Effluent Set 2 in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants). Five miles shall be measured in stream miles from the normal conservation pool elevation. The commission may grant exceptions to this requirement where it can be demonstrated that the exception would not adversely impact water quality.

(d) Discharges from stabilization ponds. Effluent Set 3 in §309.4 of this title shall apply to stabilization pond facilities in which stabilization ponds are the primary process used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria. Effluent Set 3 in §309.4 of this title is considered equivalent to secondary treatment for stabilization pond systems.

(e) Discharge to an evaporation pond. Effluent discharged to evaporation ponds must receive, at a minimum, primary treatment, be within the pH limits of 6.0 - 9.0 standard units, and have a quality of 100 milligrams per liter (mg/l) five-day biochemical oxygen demand or less on a grab sample. For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(f) Land application [~~disposal~~] of treated effluent. The commission may authorize land application [~~disposal~~] of treated effluent when the applicant demonstrates that the quality of water [~~ground or surface waters~~] in the state will not be adversely affected. Each project

must be consistent with laws relating to water rights. The primary purpose of such a project must be to dispose of treated effluent and/or to further enhance the quality of effluent prior to discharge. For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(1) When irrigation systems ultimately dispose of effluent on land to which the public has access, Effluent Set 4 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. When irrigation systems ultimately dispose of effluent on land to which the public does not have access [lands to which the public does not have access are to be used for ultimate disposal of effluent], the effluent must, at a minimum, receive primary treatment and [-] Effluent Set 5 in §309.4 of this title, at a minimum, shall apply and the pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. [For irrigation systems, primary treatment is the same as described in subsection (e) of this section.] Effluent may be used for irrigation only when consistent with Subchapters B and C of this chapter (relating to Location Standards and Land Application [~~Disposal~~] of Sewage Effluent).

(2) When overland flow systems are utilized for effluent treatment, the public shall not have access to the treatment area.

(A) For land application permits, primary [Primary] treated effluent meeting Effluent Set 6 in §309.4 of this title, within the pH limits of 6.0 - 9.0 standard units may be used consistent with environmental safeguards and protection of water in the state [ground and surface waters]. [For overland flow systems, primary treatment is the same as described in subsection (e) of this section.]

(B) For discharge permits, at [At] a minimum, Effluent Set 1 in §309.4 of this title shall apply to discharges from overland flow facilities except where more stringent treatment levels are required to meet water quality standards.

(3) When evapotranspiration beds, low pressure dosing, or similar soil absorption systems are utilized for on-site land application [~~disposal~~], the effluent shall, at a minimum, receive primary treatment and meet Effluent Set 7 in §309.4 of this title. Use of these on-site systems shall be consistent with environmental safeguards and the protection of water in the state [ground and surface waters. Primary treatment is the same as described in subsection (e) of this section].

(4) When subsurface area drip dispersal systems, or similar soil absorption systems ultimately dispose of effluent on land where there is the significant potential for public contact, as defined in §222.5 of this title (relating to Definitions), Effluent Set 4 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions.

(5) When subsurface area drip dispersal systems, or similar soil absorption systems ultimately dispose of effluent on land where there is the minimal potential for public contact, as defined in §222.5 of this title, Effluent Set 5 in §309.4 of this title, at a minimum, shall apply. The pH shall be within the limits of 6.0 - 9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions.

(6) Treated effluent may be land applied only when consistent with Subchapters B and C of this chapter. Use of subsurface area drip dispersal systems shall be consistent with environmental safeguards and the protection of water in the state [ground and surface waters].

~~[(7) For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.]~~

(g) Disinfection.

(1) Except as provided in this subsection, disinfection in a manner conducive to the protection of both public health and aquatic life shall be achieved on all domestic wastewater which discharges into water [waters] in the state. Any appropriate process may be considered and approved on a case-by-case basis.

(2) Where chlorination is utilized, any combination of detention time and chlorine residual where the product of chlorine ($[Cl_2]$ mg/l) X Time ($[T]$ minutes) equals or exceeds 20 is satisfactory provided that the minimum detention time is at least 20 minutes and the minimum residual is at least 0.5 mg/l. The maximum chlorine residual in any discharge shall in no event be greater than four mg/l per grab sample, or that is necessary to protect aquatic life.

(3) On a case-by-case basis, the commission will allow chlorination or disinfection alternatives to the specific criteria of time and detention described in paragraph (2) of this subsection that achieve equivalent water quality protection. These alternatives will be considered and their performance standards determined based upon supporting data submitted in an engineering report, prepared and sealed by a licensed Texas [~~registered,~~] professional engineer. The report should include supporting data, performance data, or field tracer studies, as appropriate. The commission will establish effluent limitations as necessary to verify disinfection is adequate, including chlorine residual testing, other chemical testing, and bacteria testing as specified in subsection [subsections] (h) or (i) of this section.

(4) Except as provided in this subsection [herein], disinfection of domestic wastewater which is discharged by means of land application [~~disposal~~] or evaporation pond shall be reviewed on a case-by-case basis to determine the need for disinfection. All effluent discharged to land to which the public has access must be disinfected and if the effluent is to be transferred to a holding pond or tank, the effluent shall be rechlorinated to a trace chlorine residual at the point of irrigation application. All effluent discharged to land via a subsurface area drip dispersal system to which there is a potential for public contact shall be disinfected and shall comply with an *Escherichia coli* (*E. coli*) bacteria effluent limitation of 126 colony forming units per 100 milliliters of water or a fecal coliform effluent limitation of 200 colony forming units per 100 milliliters water, per grab sample, in accordance with paragraph (1) of this subsection.

(5) Unless otherwise specified in a permit, chemical disinfection is not required for stabilization ponds when the total retention time in the free-water-surface ponds (based on design flow) is at least 21 days.

(h) Effluent limitations for bacteria.

(1) To demonstrate the disinfection level in effluent discharged into water in the state by its wastewater treatment facility, a permittee shall measure the amount of bacteria in the effluent.

(A) *E. coli* [~~To demonstrate disinfection, Escherichia coli (E. coli)~~] must be the indicator bacteria measured for discharges to fresh water.

(B) *Enterococci* [~~To demonstrate disinfection, Enterococci~~] must be the indicator bacteria measured for discharges to salt water.

(2) The monthly average bacteria effluent limitation in a Texas Pollutant Discharge Elimination System (TPDES) permit must

be the applicable geometric mean for the most stringent contact recreation category as specified in Chapter 307 of this title (relating to Texas Surface Water Quality Standards).

(3) The daily maximum bacteria effluent limitation in a TPDES permit must be the applicable single grab sample for the most stringent contact recreation category in Chapter 307 of this title.

(i) More stringent requirements. The commission may impose more stringent requirements in permits than those specified in subsections (a) - (h) of this section, on a case-by-case basis, where appropriate to maintain desired water quality levels or protect human health.

§309.4. *Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants.*

Figure: 30 TAC §309.4 contains the effluent limitations for domestic wastewater treatment plants. [This table contains the sets of effluent criteria for waste discharge permits.]

Figure: 30 TAC §309.4
[Figure: 30 TAC §309.4]

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 14, 2019.

TRD-201901824

Robert Martinez

Director, Environmental Law Division

Texas Commission on Environmental Quality

Earliest possible date of adoption: July 28, 2019

For further information, please call: (512) 239-6812



SUBCHAPTER B. LOCATION STANDARDS

30 TAC §§309.10 - 309.14

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health;

and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendments are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendments implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.10. *Purpose, Scope, and Applicability.*

(a) This subchapter [chapter] establishes minimum standards for the location of domestic wastewater treatment facilities. These standards are to be applied in the evaluation of an application for a permit to treat and dispose of domestic wastewater and for obtaining approval of construction plans and specifications. This subchapter [chapter] applies to domestic wastewater permit applications and construction plans and specifications filed on or after October 8, 1990, for new facilities and substantial changes in the function or use of existing units [which undergo substantial change for the continued purpose of domestic wastewater treatment].

(b) The purpose of this subchapter [chapter] is to condition issuance of a permit and/or approval of construction plans and specifications for new domestic wastewater treatment facilities or the substantial change in the function or use of an existing unit on selection of a site that minimizes possible contamination of water in the state [ground and surface waters]; to define the characteristics that make an area unsuitable or inappropriate for a wastewater treatment facility; to minimize the possibility of exposing the public to nuisance conditions; and to prohibit issuance of a permit for a facility to be located in an area determined to be unsuitable or inappropriate, unless the design, construction, and operational features of the facility will mitigate the unsuitable site characteristics.

§309.11. *Definitions.*

The following words and terms, when used in this subchapter [chapter], shall have the following meanings, unless the context clearly indicates otherwise.

(1) Active geologic processes--Any natural process which alters the surface and/or subsurface of the earth, including, but not limited to, erosion (including shoreline erosion along the coast), submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cutting, and earthquakes.

(2) Aquifer--A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Portions of formations, such as clay beds, which are not capable of yielding a significant amount of groundwater to wells or springs are not aquifers.

(3) Erosion--The group of natural processes, including weathering, deterioration, detachment, dissolution, abrasion, corrosion, wearing away, and transportation, by which earthen or rock material is removed from any part of the earth's surface.

(4) Existing facility--Any facility used for the storage, processing, or application [disposal] of domestic wastewater and which has obtained approval of construction plans and specifications as of March 1, 1990.

(5) New facility--Any domestic wastewater treatment facility which is not an existing facility.

(6) Nuisance odor prevention--The reduction, treatment, and dispersal of potential odor conditions that interfere with another's use and enjoyment of property that are caused by or generated from a wastewater treatment plant unit, which conditions cannot be prevented by normal operation and maintenance procedures of the wastewater treatment unit.

(7) One hundred-year flood plain--Any land area which is subject to a 1.0% or greater chance of flooding in any given year from any source.

(8) Substantial change in the function or use--An increase in the pollutant load or modification in the existing purpose of the unit.

(9) Wastewater treatment plant unit--Any apparatus necessary for the purpose of providing treatment of wastewater (i.e., aeration basins, splitter boxes, bar screens, sludge drying beds, clarifiers, overland flow sites, treatment ponds or basins that contain wastewater, etc.). For purposes of compliance with the requirements of §309.13(e) of this title (relating to Unsuitable Site Characteristics), this definition does not include off-site bar screens, off-site lift stations, flow metering equipment, or post-aeration structures needed to meet permitted effluent minimum dissolved oxygen limitations.

(10) Wetlands--Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, playa lakes, and similar areas.

§309.12. Site Selection to [To] Protect Water in the State [Groundwater or Surface Water].

The commission may not issue a permit for a new facility or for the substantial change of an existing facility unless it finds that the proposed site, when evaluated in light of the proposed design, construction or operational features, minimizes possible contamination of water in the state [surface water and groundwater]. In making this determination, the commission may consider the following factors:

- (1) active geologic processes;
- (2) groundwater conditions such as groundwater flow rate, groundwater quality, length of flow path to points of discharge, and aquifer recharge or discharge conditions;
- (3) soil conditions such as stratigraphic profile and complexity, hydraulic conductivity of strata, and separation distance from the facility to the aquifer and points of discharge to surface water in the state; and
- (4) climatological conditions.

§309.13. Unsuitable Site Characteristics.

(a) A wastewater treatment plant unit may not be located in the 100-year flood plain unless the plant unit is protected from inundation and damage that may occur during that flood event.

(b) A wastewater treatment plant unit may not be located in wetlands. (This prohibition is not applicable to constructed wetlands.)

(c) A wastewater treatment plant unit may not be located closer than 500 feet from a public water well as provided by §290.41(c)(1)(B) of this title (relating to [Ground] Water Sources [and Development]) nor 250 feet from a private water well. The following separation distances apply to any facility used for the storage, processing, or application [disposal] of domestic wastewater. Exceptions

to these requirements will be considered at the request of a permit applicant on a case-by-case basis, and alternative provisions will be established in a permit if the alternative condition provides adequate protection to potable water sources and supplies.[:]

(1) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs[: or soil absorption systems (including low pressure dosing systems, drip irrigation systems, and evapotranspiration beds)] must be located a minimum horizontal distance of 150 feet from a private water well.[:]

(2) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of 500 feet from an elevated or ground potable-water storage tank as provided by §290.43(b)(1) of this title (relating to Water Storage [Location of Clear Wells, Standpipes, and Ground Storage and Elevated Tanks]).[:]

(3) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of 500 feet from a public water well site as provided by §290.41(c)(1)(C) of this title, spring, or other similar sources of public drinking water.[:]

(4) A wet well or pump station at a wastewater treatment facility must be located a minimum horizontal distance of 300 feet from a public water well site, spring, or other similar sources of public drinking water as provided by §290.41(c)(1)(B) of this title.[: and]

(5) A wastewater treatment plant unit, or land where [surface] irrigation using wastewater effluent occurs, must be located a minimum horizontal distance of 500 feet from a surface water treatment plant as provided by §290.42(a)(2)(A) [§290.41(e)(3)(A)] of this title (relating to Water Treatment).

(d) A wastewater treatment facility surface impoundment may not be located in areas overlying the recharge zones of major or minor aquifers, as defined by the Texas Water Development Board, unless the aquifer is separated from the base of the containment structure by a minimum of three feet of material with a hydraulic conductivity toward the aquifer not greater than 10^{-7} cm/sec or a thicker interval of more permeable material which provides equivalent or greater retardation of pollutant migration. A synthetic membrane liner may be substituted with a minimum of 40 [30] mils thickness and an underground leak detection system with appropriate sampling points.

(e) One of the following alternatives must be met as a compliance requirement to abate and control a nuisance of odor prior to construction of a new wastewater treatment plant unit, or substantial change in the function or use of an existing wastewater treatment unit.[:]

(1) Lagoons with zones of anaerobic activity (e.g., facultative lagoons, un-aerated equalization basins, etc.) may not be located closer than 500 feet to the nearest property line. All other wastewater treatment plant units may not be located closer than 150 feet to the nearest property line. Land used to treat primary effluent is considered a plant unit. Buffer zones for land used to dispose of treated effluent by irrigation shall be evaluated on a case-by-case basis. The permittee must hold legal title or have other sufficient property interest to a contiguous tract of land necessary to meet the distance requirements specified in this paragraph during the time effluent is disposed by irrigation.[:]

(2) The applicant must submit a nuisance odor prevention request for approval by the executive director. A request for nuisance odor prevention must be in the form of an engineering report, prepared and sealed by a licensed Texas professional engineer in support of the request. At a minimum, the engineering report shall address existing

climatological conditions such as wind velocity and atmospheric stability, surrounding land use which exists or which is anticipated in the future, wastewater characteristics in affected units pertaining to the area of the buffer zone, potential odor generating units, and proposed solutions to prevent nuisance conditions at the edge of the buffer zone and beyond. Proposed solutions shall be supported by actual test data or appropriate calculations. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed. [; øf]

(3) The permittee must submit sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the applicant. Sufficient evidence of legal restriction may, among others, take the form of a suitable restrictive easement, right-of-way, covenant, deed restriction, deed recorded, or a private agreement provided as a certified copy of the original document. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed.

(f) For a facility for which a permit application, other than a renewal application, is made after October 8, 1990, if the facility will not meet the buffer zone requirement by one of the alternatives described in subsection (e) of this section, the applicant shall include in the application for the discharge permit a request for a variance. A variance will be considered on a case-by-case basis and, if granted by the commission, shall be included as a condition in the permit. This variance may be granted by the commission, consistent with the policies set out in Texas Water Code, §26.003.

(g) Any approved alternative for achieving the requirements of this section [subsection] must remain in effect as long as the wastewater treatment plant is permitted by the commission. To comply with this requirement, the permittee must carry out the nuisance odor prevention plan at all times, shall ensure sufficient property ownership or interest and shall maintain easements prohibiting residential structures, as appropriate.

(h) For a permitted facility undergoing renewal of an existing permit with plans and specifications approved prior to March 1, 1990, for which no design change is requested, the facility will not be required to comply with the requirements of this section [subsection].

(i) Facilities for which plans and specifications have been approved prior to March 1, 1990, are not required to resubmit revised plans and specifications to meet changed requirements in this section in obtaining renewal of an existing permit.

§309.14. Prohibition of Permit Issuance.

(a) The commission may not issue, amend, or renew a permit for a wastewater treatment plant if the facility does not meet the requirements of §309.13 of this title (relating to Unsuitable Site Characteristics).

(b) Nothing in this chapter shall be construed to require the commission to issue a permit, regardless of whether [notwithstanding a finding that] the proposed facility would satisfy the requirements of §309.12 of this title (relating to Site Selection to [Fo] Protect Water in the State [Groundwater or Surface Water]) and [notwithstanding the absence of site characteristics which would disqualify the site from permitting pursuant to] §309.13 of this title [(relating to Unsuitable Site Characteristics)].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER C. LAND APPLICATION OF SEWAGE EFFLUENT

30 TAC §309.20

Statutory Authority

The amendment is proposed under Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The amendment is also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The amendment implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.20. Land Application [Disposal] of Sewage Effluent.

(a) Technical report. Each project shall be accompanied by a preliminary engineering report outlining the design of the wastewater application [disposal] system. The report shall include maps, diagrams, basis of design, calculations, and other pertinent data as described in this section.

- (1) Location.

(A) Site map. A copy of the United States Geological Survey 7 1/2 minute topographic map or equivalent for renewals of the area which indicates the exact boundaries of the application [disposal] operation must [will] be included in the technical report. A map from the 7 1/2 minute series is required if it is published for the site area.

(B) Site drawing. A scale drawing and legal description of all land which is to be a part of the application [disposal] operation will be included in the technical report. The drawing must [will] show the location of all existing and proposed facilities to include: buildings, wastewater application [waste disposal] or treatment facilities, effluent storage and tail water control facilities, buffer zones, and water wells. This drawing must [should] have an index of wells, adjacent property, and other prominent features. Ownership of land tracts adjacent to the irrigated land shall be shown on the site drawing and identified by listing legal ownership.

(2) Geology. The existence of any unusual geological formations such as faults or sink holes on the wastewater application [waste disposal] site shall be noted in the technical report and identified on the site map. The conceptual design of the wastewater application [waste disposal] system shall include appropriate engineering considerations with respect to limitations presented by these features.

(3) Soils. A general survey of soils with regard to standard classifications shall be compiled for all areas of wastewater [waste] application to the soil. Soil surveys compiled by the United States Department of Agriculture Natural Resources [Soil] Conservation Service shall be utilized where available. Conceptual design aspects related to wastewater [waste] application rates, crop systems, seepage, and runoff controls shall be based upon the soil physical and chemical properties, hydraulic characteristics, and crop use suitabilities for the wastewater [waste] application site.

(4) Groundwater quality. The technical report shall fully assess the impact of the wastewater application [waste disposal] operation on the uses of local groundwater resources. In regard to performing this assessment, the report shall systematically address subparagraphs (A) and (B) of this paragraph.

(A) All water wells within a 1/2 mile radius of the application [disposal] site boundaries shall be located. If available, the water uses from each well shall be identified. In addition, aspects of construction such as well logs, casing, yield, static elevation, water quality, and age shall be furnished and evaluated in the technical report. Local groundwater resources below the wastewater application [disposal] site shall be monitored to establish preoperational baseline groundwater quality when monitoring wells are available. Monitoring shall provide the following analytical determination: total dissolved solids, nitrate nitrogen, chlorides, sulfates, pH, and *Escherichia coli* [coliform] bacteria.

(B) Groundwater resources serving as sources or potential sources of domestic raw water supply will be protected by limiting wastewater application rates. Effluent storage and/or treatment ponds presenting seepage hazards to these groundwater resources shall be constructed with adequate liners.

(5) Agricultural practice. The technical report shall describe the crop system proposed for the wastewater application [waste disposal] operation. This description shall include a discussion of the adaptability of the crop to the particular soil, climatological, and wastewater sensitivity conditions that will exist at the wastewater application [waste disposal] site. Annual nutrient uptake of the crop system shall be specified, and crop harvesting frequencies shall be described within the report.

(b) Irrigation. Irrigation application [disposal] systems utilize effluent to supply the growth needs of the cover crop.

(1) Secondary effluent. Land application [disposal] system operators who use land accessible to the general public shall provide a degree of treatment equivalent to secondary treatment standards, as required by §309.3(f)(1) of this title (relating to Application of Effluent Sets) [defined by the commission], prior to application of wastewater [waste] to land areas.

(2) Primary effluent. Land application [disposal] systems may provide for the application [disposal] of effluent from primary treatment units provided that the wastewater application [disposal] system conforms with the requirements contained in subparagraphs (A) - (E) of this paragraph.

(A) The wastewater application [disposal] system shall be designed and operated to prevent a discharge from entering surface water in the state [waters], and to prevent recharge of groundwater resources which supply or offer the potential of supplying domestic raw water.

(B) The land application [disposal] system shall be designed and operated to achieve application [disposal] of effluent without adversely affecting the agricultural productivity of the land application [disposal] site.

(C) The economic benefits derived from agricultural operations carried out at the land application [disposal] site are secondary to the proper application [disposal] of wastewater.

(D) The sewerage system owner shall maintain direct responsibility and control over all aspects of the sewage pretreatment and application operations, as well as all aspects of any agricultural activities carried out on the application [disposal] site.

(E) The land application [disposal] system shall contain sufficient area to provide for normal expansion of the facility service area. In most cases, the application [disposal] system shall have a design life of at least 20 years.

(3) Design analysis. The designing engineers shall utilize a detailed design analysis of limiting hydraulic and nutrient application rates, and effluent storage needs, as the basis of the application [disposal] system design. All projects shall include the detailed design analysis described in subparagraphs (A) - (C) of this paragraph.

(A) Hydraulic application rate. A water balance study shall be provided as a part of a detailed application rate analysis in order to determine the irrigation water requirement, including a leaching requirement if needed, for the crop system on the wastewater application areas. The water balance study should generally follow the example [development] shown in Table 1 in Figure: 30 TAC §309.20(b)(3)(B) [of this subparagraph]. Precipitation inputs to the water balance shall utilize the average yearly rainfall and the monthly precipitation distribution based on past rainfall records. The consumptive use requirements (evapotranspiration losses) of the crop system shall be developed on a monthly basis. The method of determining the consumptive use requirement shall be documented as a part of the water balance study. A leaching requirement, calculated as shown in Table 1 of this subparagraph, shall be included in the water balance study when the total dissolved solids concentration of the effluent presents the potential for developing excessive soil salinity buildup due to the long term operation of the irrigation system.
[Figure: 30 TAC §309.20(b)(3)(A)]

(B) Effluent storage. An effluent storage study shall be performed to determine the necessary storage requirements. The storage requirements shall be based on a design rainfall year with a return

frequency of at least 25 years (the expected 25 year-one year rainfall, alternately the highest annual rainfall during the last 25 years of record may be used) and a normal monthly distribution, the application rate and cycle, the effluent available on a monthly basis, and evaporation losses. An example of an effluent storage study is shown in Table 3 in Figure: 30 TAC §309.20(b)(3)(B) [of this subparagraph].
Figure: 30 TAC §309.20(b)(3)(B)
[Figure: 30 TAC §309.20(b)(3)(B)]

(C) Nitrogen application rate. Irrigation shall be limited to prevent excessive nitrogen application. The annual liquid loading shall not exceed that which would introduce more nitrogen than is annually required by the crop plus 20% volatilization. Values of crop nitrogen requirements shall be justified in the design report. The application rate shall be calculated by the formula in Figure: 30 TAC §309.20(b)(3)(C).

Figure: 30 TAC §309.20(b)(3)(C) (No change.)

(4) Soil testing. Representative soil samples shall be taken from the root zones of wastewater application sites to establish pre-operational soil concentrations of pH, total nitrogen, potassium, phosphorus, and conductivity. Sampling procedures shall employ accepted techniques of soil science for obtaining representative analytical results. Preoperational soil concentration of the parameters listed in this paragraph [Baseline values of the parameters specified in paragraph (3)(C) of this subsection] shall be furnished in the technical report. The project development shall provide for a minimum of one soil test annually from each wastewater application site for the duration of the application [disposal] system design life.

(5) Standard irrigation best management practices.

(A) Screening devices should be installed on all lift pump suction intakes.

(B) The design of sprinkler irrigation systems should allow operational flexibility and efficiency and ease of maintenance.

(i) The system should be designed to provide a uniform water distribution.

(ii) The designing engineer should consider such items as permanently buried mains with readily accessible valve boxes, two or more lateral lines, and quick coupling valves at the main/lateral connections.

(iii) Cross connection with a potable water supply system is prohibited. Cross connection with a well water system will be reviewed on a case-by-case basis.

(C) Vehicular access to conveyance system locations and equipment should be provided at intervals of 1,000 feet to 1,300 feet.

(D) The cover crop of each wastewater application area shall be harvested a minimum of once per year. Consideration should be given to the selection of crops which will allow two or more harvests per year to be made.

(E) All effluent applied as irrigation water should have a pH within the range of 6.0 to 9.0.

(c) Percolation. Percolation application [disposal] systems provide for ultimate application [disposal] of the wastewater by evaporation and percolation with no resulting discharge to surface water in the state [waters].

(1) Percolation systems will not be permitted in those locations where seepage would adversely affect the uses of groundwater resources.

(2) Primary treatment of the raw sewage shall be provided prior to land application [disposal].

(3) Percolation systems shall be limited to sites having soil textures suitable for sustaining a rapid intake rate. Percolation dosing sites shall be limited to soils classified as sands, loamy sands, or sandy loams having a minimum infiltration rate of six inches per hour.

(4) Multiple dosing basins shall be provided for the application of wastewater. The wastewater distribution system shall be designed to provide a maximum dosing period of 24 hours upon any individual dosing basin and a minimum resting period for any individual dosing basin of five days following a period of dosing.

(5) The hydraulic loading rate will be considered on a case-by-case basis. The designing engineer shall identify the permeability of the limiting soil layer.

(6) The design shall provide an area equal to a minimum of 20% of the total application [disposal] site area for the construction of wastewater storage for use [utilization] during periods of wet or freezing weather and to provide flexibility of dosing site use [utilization].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER D. BENEFICIAL REUSE CREDIT

30 TAC §§309.21 - 309.25

Statutory Authority

The new sections are proposed under the Texas Water Code (TWC), §5.013, which establishes the general jurisdiction of the commission, while TWC, §5.102, provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103; TWC, §5.103, which requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state; TWC, §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under the TWC; TWC, §5.120, which requires the commission to administer the law for the maximum conservation and protection of the environment and natural resources of the state; TWC, §26.011, which provides the commission with the authority to establish the level of quality to be maintained in, and to control the quality of, the water in the state; TWC, §26.0135, which provides the commission with the authority to monitor and assess the water quality of each watershed and river basin in the state; TWC, §26.027, which authorizes the commission to issue permits for the discharge of wastewater or pollutants into or adjacent to water in the state; TWC, §26.034, which provides the commission with the authority, on a case-by-case basis, to review and approve plans and specifications for treatment facilities, sewer systems, and disposal

systems that transport, treat, or dispose of primarily domestic wastes; TWC, §26.041, which gives the commission the authority to set standards to prevent the disposal of wastewater that is injurious to the public health; and TWC, §26.121, which gives the commission the authority to set standards to prohibit unauthorized discharges into or adjacent to water in the state.

The new sections are also proposed under TWC, §11.1271(e), which requires the commission, in conjunction with the Texas Water Development Board, to develop model water conservation programs for different types of water suppliers that suggest best management practices for achieving the highest practicable levels of water conservation and efficiency achievable for each specific type of water supplier.

The new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.120, 11.1271(e), 26.011, 26.0135, 26.027, 26.034, 26.041, and 26.121.

§309.21. Purpose, Scope, and Applicability.

(a) This subchapter provides for a beneficial reuse credit that may be used to account for beneficial reuse of treated wastewater for land application calculations. This subchapter establishes requirements for obtaining a beneficial reuse credit and requirements that apply to an entity who holds a permit that includes a beneficial reuse credit.

(b) This subchapter applies to an entity who applies for a Texas Land Application Permit (TLAP) under Chapter 305 of this title (relating to Consolidated Permits) to dispose of domestic wastewater if the application proposes a beneficial reuse credit. This subchapter also applies to an entity who holds a TLAP that includes a beneficial reuse credit.

(c) This subchapter does not apply to:

(1) domestic wastewater treatment facilities permitted to discharge to water in the state under a Texas Pollutant Discharge Elimination System permit issued under Chapter 305 of this title; and

(2) industrial facilities.

(d) This subchapter does not allow an entity to discharge wastewater or reclaimed water into water in the state. For the purpose of this subchapter, a discharge from a user's pond or storage unit that is a direct result of a rainfall event is considered an unauthorized discharge. A permit issued that includes a beneficial reuse credit in accordance with this subchapter does not protect an entity from liability for unauthorized discharges.

§309.22. Definitions.

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Beneficial reuse credit--The amount by which the permitted flow can be reduced to calculate the required land application area for a Texas Land Application Permit.

(2) Firm reclaimed water demand--The amount of water that has been historically used by the permittee or water user for beneficial reuse.

(3) Reclaimed water--As defined in Chapter 210 of this title (relating to Use of Reclaimed Water).

(4) Total monthly volume--The sum of all water use data across users of the same type of water use (i.e. indoor use or outdoor use) for the same month.

(5) Total nitrogen--Nitrate-nitrogen plus ammonia-nitrogen plus organically bound nitrogen.

(6) User--As defined in Chapter 210 of this title (relating to Use of Reclaimed Water).

(7) Water use data--Recorded monthly amounts of water for uses allowed in a reclaimed water use authorization issued under Chapter 210 of this title (relating to Use of Reclaimed Water). Water use data may include the amount of potable water used if the user has a contractual agreement with the permittee to substitute reclaimed water for potable water for the same type of use indicated.

§309.23. Demonstrating Firm Reclaimed Water Demand.

(a) The applicant shall submit five years or more of consecutive water use data for each user, if available. If five years of data is not available, the applicant shall submit a minimum of two consecutive years of water use data for each user to demonstrate firm reclaimed water demand. Water user data must be from the period immediately preceding the date the application is received.

(b) The applicant shall submit the total monthly volume of water used by users satisfying subsection (a) of this section for indoor use and outdoor use, respectively.

(c) Water use data can be for reuse conducted by either the applicant or reclaimed water users that have a contract with the applicant to reuse the applicant's reclaimed water. The contract must be for a minimum term of five years.

(d) Water use data must be for the same type of reclaimed water use proposed (for example, a user's landscape irrigation data may not be used to support the user's dust control or toilet flushing use).

(e) For each user, water use data must include:

(1) the amount of water used on a monthly basis;

(2) the type of use of the water at each site; and

(3) the number of acres irrigated at each site, if applicable.

(f) At the discretion of the executive director, a water user's data may not be counted toward the beneficial reuse credit if the executive director determines that the user's water data is unreliable due to the user's noncompliance with state laws, rules, or permit conditions within the five-year period immediately preceding the date the application is received.

(g) At the discretion of the executive director, an applicant may not be eligible for beneficial reuse credit if the applicant has been issued a violation that resulted in an enforcement case within the five-year period immediately preceding the date the application is received.

(h) Prospective or speculative reclaimed water use data may not be used to calculate the beneficial reuse credit.

§309.24. Calculating and Using Beneficial Reuse Credit.

(a) For outdoor uses.

(1) For users with less than five years of water use data, the beneficial reuse credit is calculated as 80% of the lowest total monthly volume of water used.

(2) For users with five or more years of water use data, the beneficial reuse credit is calculated as 80% of the average of the three lowest total monthly volumes of water use data submitted for the five years prior to the date the application is submitted. All users must have at least five consecutive years of data when taking the average of the lowest three months.

(b) For indoor uses.

(1) For users with less than five years of water use data, the beneficial reuse credit is calculated as 100% of the lowest total monthly volume of water used.

(2) For users with five or more years of water use data, the beneficial reuse credit is calculated as 100% of the average of the lowest three total monthly volumes of water use data submitted for the five years prior to the date the application is submitted. All users must have at least five consecutive years of data when taking the average of the lowest three months.

(c) When calculating the hydraulic application rate as described in §309.20(b)(3)(A) of this title (relating to Land Application of Sewage Effluent) or §222.83 of this title (relating to Hydraulic Application Rate) for subsurface area drip dispersal systems, the permitted flow may be reduced by the beneficial reuse credit.

(d) The size of the land application site area may not be reduced by more than 50% of the size required when calculating the hydraulic application rate using the permitted flow without the beneficial reuse credit.

(e) When calculating the required effluent storage as described in §309.20(b)(3)(B) of this title or §222.127 of this title (relating to Storage), the permitted flow may not be reduced by the beneficial reuse credit.

(f) For the purpose of recalculating the beneficial reuse credit and for renewing a permit, the executive director may accept water use data from users with less than two years of data on a case-by-case basis.

§309.25. Requirements.

(a) Application Requirements.

(1) The applicant must provide the executive director with a list of users and the type of use(s) for each user. For users that propose to use the reclaimed water for irrigation, the list must include the acreage and crop(s) irrigated for each irrigation area.

(2) The applicant must provide the executive director with a map showing the location of the water use sites at a scale specified by the executive director.

(3) The applicant must submit all water use data used to calculate firm reclaimed water demand.

(4) The executive director may request additional information as may be necessary for an adequate technical review of the application.

(5) For permits issued prior to the effective date of this subchapter, the permittee must apply for a permit amendment under Chapter 305 of this title (relating to Consolidated Permits) for approval of a new or approval of a change to an existing beneficial reuse credit.

(b) General Requirements.

(1) An applicant must receive authorization required by Chapter 210 of this title (relating to Use of Reclaimed Water) before applying for a beneficial reuse credit. The executive director may waive this requirement for a new facility if the executive director finds that the application contains all information required by §309.23 of this title (relating to Demonstrating Firm Reclaimed Water Demand). If a beneficial reuse credit is granted for a new facility, the permit must include:

(A) the requirements and conditions that apply to the regulated activity without considering the beneficial reuse credit, applicable from the date of permit issuance until the permittee receives authorization for reclaimed water use under Chapter 210 of this title; and

(B) the requirements and conditions that apply after the permittee receives authorization for reclaimed water use under Chapter 210 of this title.

(2) A permittee and, to extent applicable, a user must maintain authorization under Chapter 210 of this title during the term of the Texas Land Application Permit.

(3) The term of a permit that includes a beneficial reuse credit may not exceed five years.

(4) A permit that includes a beneficial reuse credit must include limits for both the permitted flow and the land application flow. The land application flow limit must be equal to the permitted flow limit minus the beneficial reuse credit.

(5) A permittee that is granted a beneficial reuse credit shall have a contractual agreement to dispose of unused treated effluent on an emergency basis, using the pump-and-haul method or another method approved by the executive director. The permittee shall use the contracted disposal method if all of the following conditions are met:

(A) a user of reclaimed water no longer needs the reclaimed water;

(B) a new user has not been contracted to accept the reclaimed water;

(C) the permitted facility does not have adequate capacity to store the unused reclaimed water; and

(D) additional application to the permitted land application area would exceed the permitted application rate or is otherwise prohibited by the permit.

(6) A permittee that is granted a beneficial reuse credit must meet a minimum of Type II effluent quality as described in §210.33 of this title (relating to Quality Standards for Using Reclaimed Water).

(c) Reporting Requirements.

(1) If the users or the irrigation areas change, the permittee must provide the executive director with an updated list of users and irrigations areas within 30 days after the change. A change in user or area is not an amendment to the permit.

(2) A permittee that is granted a beneficial reuse credit shall submit the following to the executive director by September 30th of each year for the reporting period of September 1st to August 31st:

(A) monthly data on the amount of reclaimed water used by each user;

(B) the type of water use(s) for each user;

(C) the acreage of each irrigation site, if applicable;

(D) the crop(s) irrigated at each irrigation site, if applicable;

(E) a recalculation of the beneficial reuse credit; and

(F) the total nitrogen concentration of the effluent.

(3) If the recalculated beneficial reuse credit submitted in the annual report is reduced, the executive director may require a permit amendment.

(4) The total nitrogen concentration of the effluent shall be tested quarterly by grab sample for the first year of the permit term, after which the frequency for testing may be reduced to annually upon approval by the executive director.

(5) The permittee shall submit monthly effluent reports to the executive director in accordance with the effluent limitations and monitoring requirements of the permit.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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TABLES & GRAPHICS

Graphic images included in rules are published separately in this tables and graphics section. Graphic images are arranged in this section in the following order: Title Number, Part Number, Chapter Number and Section Number.

Graphic images are indicated in the text of the emergency, proposed, and adopted rules by the following tag: the word "Figure" followed by the TAC citation, rule number, and the appropriate subsection, paragraph, subparagraph, and so on.

Figure: 30 TAC §309.4

Table 1
Effluent Limitations for Domestic Wastewater Treatment Plants

Set	Direct Discharge	30-Day Average			7-Day Average			Daily Maximum			Single Grab		
		BOD ₅	TSS	DO MIN	BOD ₅	TSS	DO MIN	BOD ₅	TSS	DO MIN	BOD ₅	TSS	DO MIN
1	Secondary treatment	20	20	2.0	30	30	45	45	45	65	65	2.0	
2	Enhanced secondary treatment	10	15	4.0	15	25	40	25	40	35	60	4.0	
3	Stabilization ponds	30	90	4.0	45	--	--	70	--	100	--	4.0	
Land Treatment/Application													
4	Irrigation (public exposure*) Subsurface area drip dispersal system (public contact**)	20	20	--	30	30	45	45	45	65	65	--	
	Using stabilization ponds Subsurface area drip dispersal system using stabilization ponds (public contact**)	30	90	--	45	--	--	70	--	100	--	--	
5	Irrigation (no public exposure) Subsurface area drip dispersal system (no public contact)	--	--	--	--	--	--	--	--	100	--	--	
6	Overland flow (applied effluent)	--	--	--	--	--	--	--	--	100	--	--	
7	Evapotranspiration beds and low pressure dosing	--	--	--	--	--	--	--	--	100	--	--	

	30-Day Average			7-Day Average			Daily Maximum			Single Grab			
	CBOD ₅	TSS	NH ₄ -N	CBOD ₅	TSS	NH ₄ -N	CBOD ₅	TSS	NH ₄ -N	CBOD ₅	TSS	NH ₄ -N	DO MIN
Enhanced													
2N Secondary with Nitrification	10	15	3	15	25	6	25	40	10	35	60	15	4.0
2N1 Secondary with Nitrification	10	15	2	15	25	5	25	40	10	35	60	15	4.0

Note: * - Public Exposure: The potential for the public to come into direct contact with treated effluent.
 ** - Public Contact: The potential for the public to come into contact with the soil over a dispersal zone, as defined in §222.5 of this title (relating to Definitions).

Figure: 30 TAC §309.20(b)(3)(B)

TABLE 1
 WATER BALANCE EXAMPLE
 (All Units are Inches of Water per Acre of Irrigated Area)

Month (1)	a Avg. Precip. (2)	b Average Runoff (3)	Ri Average Infiltrated Rainfall (4)	c Evapotrans- piration (5)	d Required Leaching (6)	Total Water Needs (5)+(6) (7)	Effluent Needed in Root Zone (7)-(4) (8)	e Evaporation from Reservoir surface (9)	f Effluent to be applied to Land (8)/K (10)	g Consumption from Reservoir (9)+(10) (11)
Jan.	2.11	0.40	1.71	0.80	0.00	0.80	0.00	0.02	0.00	0.02
Feb.	2.43	0.57	1.86	1.20	0.00	1.20	0.00	0.01	0.00	0.01
Mar.	2.02	0.36	1.66	2.80	0.20	3.00	1.34	0.09	1.58	1.67
April	3.19	1.03	2.16	3.40	0.22	3.63	1.46	0.05	1.72	1.77
May	4.19	1.74	2.45	6.10	0.64	6.74	4.29	0.10	5.05	5.15
June	3.30	1.10	2.20	6.50	0.76	7.26	5.06	0.20	5.95	6.15
July	2.20	0.45	1.75	6.70	0.87	7.57	5.82	0.34	6.85	7.19
Aug.	2.12	0.41	1.71	4.60	0.51	5.11	3.40	0.34	4.00	4.34
Sept.	3.58	1.30	2.28	5.10	0.50	5.60	3.32	0.19	3.91	4.10
Oct.	3.09	0.96	2.13	4.10	0.35	4.45	2.32	0.14	2.73	2.87
Nov.	2.23	0.46	1.77	2.10	0.06	2.16	0.39	0.07	0.46	0.53
Dec.	2.34	0.52	1.82	1.00	0.00	1.00	0.00	0.03	0.00	0.03
	32.80	9.30	23.50	44.40	4.11	48.51	27.40	1.58	32.25	33.83

- a. Up-to-date rainfall and evaporation data sets are available from the Texas Natural Resource Information System.
- b. Runoff should be determined by an acceptable method such as the Soil Conservation Service method found in SCS Technical Release No. 55. For example, purposes only, a CN value of 74 was assumed for good pasture with Class "C" soils.
- c. Suggested source of values is the "Bulletin 6019, Consumptive Use of Water by Major Crops in Texas," Texas Board of Water Engineers.
- d. In low rainfall areas, this is the required leaching to avoid salinity build-up in the soil is calculated using the following equation:

$$L = \frac{C_e (I - R_i)}{CI - C_e}$$

Where:

C_e = Electrical Conductivity of Effluent

E = Evapotranspiration

R_i = Infiltrated Rainfall

CI = Maximum Allowable Conductivity of Soil Solution (Table 3)

For example purposes only, a C_e value of 1.5 millimhos/cm at 25°C and a CI value of 10.0 (Bermuda Grass) were used.

- e. Net Average Evaporation from Reservoir Surface. For example purposes only, irrigation area = 100 acres and reservoir surface area = 5 acres. Therefore, values are 5% of Evaporation figures of Austin, Texas.
- f. K is the irrigation efficiency. K value is 0.85 unless specific information is provided to support a different value.
- g. The total of this column is the maximum allowable application rate in acre-inch per acre per year.

TABLE 2
EXAMPLE CALCULATION OF STORAGE VOLUME REQUIREMENTS
 (All Units are Inches of Water per Acre of Irrigated Area)

Month	a Effluent Received for Application or Storage	b Rainfall Highest Year in Past 25 Year	c Runoff Highest Year in Past 25 Year	d Net 25 Year Low Evaporation from Regul. Surf.	e Storage	f Accumulated Storage
(12)	(13)	(14)	(15)	(18)	(19)	(20)
Jan.	2.70	3.28	1.09	0.00	2.69	8.49
Feb.	2.70	3.80	1.45	0.01	2.69	11.18
Mar.	2.70	3.18	1.02	0.04	1.67	12.85
April	2.70	4.98	2.35	0.02	1.51	14.36
May	2.70	6.57	3.67	0.04	-1.86	12.50
June	2.70	5.13	2.47	0.09	-2.80	9.70
July	2.70	3.44	1.20	0.16	-3.73	5.97
Aug.	2.70	3.33	1.12	0.16	-0.87	5.10
Sept.	2.70	5.59	2.84	0.08	-0.74	4.36
Oct.	2.70	4.82	2.22	0.07	0.45	0.45
Nov.	2.70	3.49	1.23	0.03	2.67	3.12
Dec.	2.70	3.64	1.34	0.02	2.68	5.80
	32.40	51.25	22.00	0.73	61.65	

- a. For example purposes only, disposal rate is for a 240,000 gpd facility (2.7 acre-feet per acre per year) irrigating 100 acres. Maximum values for Column 13 are the value (total) of Column 11 divided by 12. Note that the values in Column 13 could be adjusted to allow for seasonal variation in effluent output.
- b. Annual rainfall amount from the highest year in past 25 years of data. Total rainfall is then distributed proportional to monthly averages.
- c. Using rainfall figures in Column 14, calculate runoff with the same method used in Column 3.

- d. Lowest annual evaporation in past 25 years from reservoir surface. Distribute annual value proportionally to monthly average evaporation expressed in inches per irrigated acre. For example purposes only, irrigation area = 100 acres and reservoir surface area = 5 acres. Therefore, values in Column 18 are 5% of evaporation figures for Austin, Texas.
- e. Storage = $\frac{(13) - (18) - \frac{(7) - (16)}{k}}{k}$. If the term $\frac{(7) - (16)}{k}$ is negative, then the value for storage = $\frac{(13) - (18)}{k}$. Irrigation efficiency is 0.85 unless specific information is provided to support a different value.
- f. To allow for the worst condition, the summation was started in October which gives a maximum storage requirement of 14.36 inches per irrigated acre or 120 acre-feet.

TABLE 3
Salt Tolerance of Various Crop Plants

Best growth yields of each crop would occur at a salinity level below the salinity range given.

Relatively Nontolerant	Moderately Salt Tolerant	Relatively Salt Tolerant	Highly Salt Tolerant
2.0 - 4.0	4.0 - 6.0	6.0 - 8.0	8.0 - 12.0
Field Crops			
Field bean Cowpeas Corn (field)	Sorghum (grain) Rye (grain) Castorbean Soybean	Cotton Sugar beet Wheat (grain) Oats (grain) Rice	Barley (grain) Rape
Forage Crops			
White clover Alsike clover Red clover Ladino clover Crimson clover Rose clover Burnet clover	Tall fescue Meadow fescue Orchard-grass Millet Sour clover Birdsfoot trefoil	Wheat-grasses Sudan grass Sweetclover Alfalfa Ryegrass Rye (hay) Wheat (hay) Oats (hay)	Alkali sacaton Bermuda grass Barley (hay) Rhodesgrass Blue grama Panicgrass

Texas Commission on Environmental Quality



ORDER ADOPTING AMENDED AND NEW RULES

Docket No. 2019-0399-RUL

Rule Project No. 2016-042-309-OW

On December 18, 2019, the Texas Commission on Environmental Quality (Commission) adopted amended rules in 30 TAC Chapter 222, concerning Subsurface Area Drip Dispersal Systems; and new and amended rules in 30 TAC Chapter 309, concerning Domestic Wastewater Effluent Limitation and Plant Siting. The proposed rules were published for comment in the June 28, 2019, issue of the *Texas Register* (44 TexReg 3227).

IT IS THEREFORE ORDERED BY THE COMMISSION that the new and amended rules are hereby adopted. The Commission further authorizes staff to make any non-substantive revisions to the rules necessary to comply with *Texas Register* requirements. The adopted rules and the preamble to the adopted rules are incorporated by reference in this Order as if set forth at length verbatim in this Order.

This Order constitutes the Order of the Commission required by the Administrative Procedure Act, Tex. Gov't Code Ann., Chapter 2001 (West 2016).

If any portion of this Order is for any reason held to be invalid by a court of competent jurisdiction, the invalidity of any portion shall not affect the validity of the remaining portions.

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Jon Niermann, Chairman

Date Signed