

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes to amend §§210.1, 210.2, 210.3, and 210.4.

Background and Summary of the Factual Basis for the Proposed Rules

The proposed rulemaking will implement Senate Bill (SB) 1289, 88th Texas Regular Legislative Session (2023), which amended the Texas Water Code (TWC), Chapter 26, by adding §26.02715.

The bill allows a wastewater treatment facility that treats domestic wastewater for reuse to dispose of the treated wastewater without a permit for an alternative means of disposal, if the facility disposes of the treated wastewater through a wastewater collection system and has consent of the operator of the wastewater collection system that will receive the treated wastewater, and any treatment facility that will further treat the water.

The bill requires TCEQ to expand the existing requirements established under 30 Texas Administrative Code (TAC) Chapter 210 (Use of Reclaimed Water), Subchapter A (General Provisions) to clarify the applicability of 30 TAC Chapter 321 (Control of Certain Activities by Rule), Subchapter P (Reclaimed Water Production Facilities) and related definitions.

Section by Section Discussion

Proposed amended section §210.1, *Applicability*, would be restructured into subsections for clarity. Existing provisions restructured under new subsection (b), are proposed to be amended to clarify that the requirements of this chapter are not applicable to the use of treated wastewater identified in a water quality permit authorizing disposal by irrigation. Existing provisions restructured under new subsection (c)(1), are proposed to be amended to clarify requirements for reclaimed water producers that have a domestic wastewater discharge permit

for a domestic wastewater treatment facility that is located at the terminus of the collection system to which the reclaimed water production facility is or will be connected. Proposed amended subsection (c) would also add requirements under proposed new subsection (c)(2) for reclaimed water producers that obtain consent from an associated domestic wastewater treatment facility and collection system to which the reclaimed water production facility is or will be connected, then the use of reclaimed water would be permissible only if the use occurs after the wastewater has been treated in accordance with the producer's reuse authorization issued under this Chapter.

Proposed amended section §210.2, *Purpose and Scope*, would expand the list of regulatory citations associated with the definition of reclaimed water activity types to include reference to Chapter 321, Subchapter P of this title (relating to Reclaimed Water Production Facilities) and Chapter 309, Subchapter C of this title (relating to Land Application of Sewage Effluent). The proposed amended section would clarify reference to Chapter 297, Subchapter A of this title (relating to Definitions and Applicability). Additionally, the proposed amended section would add new subsection (e) to clarify that a producer must obtain an approved Texas Pollutant Discharge Elimination System (TPDES) permit, Texas Land Application Permit (TLAP), or permit under 30 TAC Chapter 321, Subchapter P, of this title prior to commencement of construction and operation of the treatment facility.

Proposed amended section §210.3, *Definitions*, would add a definition for “associated domestic wastewater treatment facility”. Subsequent definitions would be renumbered. The proposed amended section would also clarify the definition of “permit or permitted” by adding appropriate regulatory citations to TWC, §5.581 (relating to Definitions), Chapter 305 of this

title (relating to Consolidated Permits), and Chapter 321, Subchapter P. The proposed amended section would also clarify that the definition is applicable to a wastewater treatment facility or reclaimed water production facility. Additionally, the proposed amended section would update reference of “Agency” to “commission” and update reference of Chapter “317” to “217” for clarity and consistency.

Proposed amended section §210.4, *Notification*, would add a reference to the permits described in §210.2(e) that contain reclaimed water quality requirements for entities that obtain consent to dispose of reclaimed water through the wastewater collection system to an associated domestic wastewater treatment facility for final treatment and disposal.

Fiscal Note: Costs to State and Local Government

Kyle Girtten, Analyst in the Budget and Planning Division, has determined that for the first five-year period the proposed rules are in effect, fiscal impacts may result for municipal wastewater treatment facilities as a result of implementation of the proposed rule. The rulemaking does not include any additional mandatory requirements for these entities. The rulemaking would not result in fiscal implications for TCEQ, state government, or other units of local government.

This rulemaking, in addition to concurrent rulemaking in Chapter 321, would allow for an alternative means for disposal of treated wastewater by allowing for reclaimed water production facilities (RWPFs) to dispose of the water without an additional permit. Any of the 7,913 public domestic wastewater treatment facilities that agree to receive and treat the reclaimed water from the RWPF may incur additional costs for construction and operation. This potentially includes costs related to adding additional capacity, connection to collection

systems, installation or modification of an influent monitoring system, and additional treatment or maintenance.

This rulemaking would also allow municipal entities to establish RWPFs without needing an additional permit for an alternative means of disposal, and without needing to construct, own, and operate an associated domestic wastewater treatment facility to be used as an alternative means of disposal. Therefore, the establishment and operation of such facilities could be done at a significantly lower cost than would otherwise have been possible.

In total, the costs or cost savings for municipal entities will depend on the amount of reclaimed water generated, used, and disposed of through the collection system of an associated domestic wastewater treatment facility.

Public Benefits and Costs

Mr. Girtten determined that for each year of the first five years the proposed rules are in effect, the public benefit will be consistent with state law, specifically SB 1289 from the 88th Texas Regular Legislative Session (2023). The rulemaking would also benefit the public by providing an alternate mechanism for establishing RWPFs through eliminating the requirement to obtain a permit for an alternative method of disposal for reclaimed water. Allowing RWPFs to obtain consent to disposal of reclaimed water through the collection system of an associated domestic wastewater treatment facility is expected to increase the number entities authorized to construct RWPFs within the State. An increase in reclaimed water production would increase the availability of water resources for a variety of uses, particularly during times of high demand such as during droughts.

This rulemaking, in addition to concurrent rulemaking in Chapter 321, would provide an alternative means for disposal of treated wastewater by allowing for RWPFs to dispose of the reclaimed water without an additional permit. Any of the 3,063 private domestic wastewater treatment facilities that agree to receive and treat the reclaimed water from the reclaimed water production facility may incur additional costs for construction and operation. This potentially includes costs related to adding additional capacity, connection to collection systems, installation or modification of an influent monitoring system, and additional treatment or maintenance.

This rulemaking would also allow private entities to establish RWPFs to do so without needing a permit for an alternative means of disposal, and without needing to construct, own, and operate an associated domestic wastewater treatment facility to be used as an alternative means of disposal. Therefore, the establishment and operation of such facilities could be done at a significantly lower cost than would otherwise have been possible.

In total, the costs or cost savings for industries or businesses will depend on the amount of reclaimed water generated, used, and disposed of through the collection system of an associated domestic wastewater treatment facility.

The proposed rulemaking could result in an increase or decrease in costs for individuals. The construction and operation of additional reclaimed water production infrastructure could result in higher water bills or additional fees that could be passed along to water users and consumers. However, cost savings could occur from additional reclaimed water production

infrastructure because the increased availability of reclaimed water could alleviate demand on existing potable water resources during times of high demand or drought. This reduction in demand could lead to lower water bills for users and consumers.

Local Employment Impact Statement

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

Rural Communities Impact Assessment

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. The amendments 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 rule for the first five-year period the proposed rules are in effect.

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 rule does 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 an increase or decrease in fees paid to the agency. The proposed rulemaking amends an existing regulation, and it does not create, expand, repeal, or limit this regulation. The proposed rulemaking does not increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rule could positively affect the state's economy by increasing opportunities for manufacturers, suppliers, and operators of reclaimed water infrastructure. Additionally, streamlining existing regulations for obtaining an alternative method of disposal for reclaimed water could increase reclaimed water production infrastructure and could increase overall potable water resources. Increased availability of potable water resources could positively affect the state's economy.

Draft Regulatory Impact Analysis Determination

TCEQ reviewed the proposed rulemaking in consideration of the regulatory analysis of major environmental rules required by Texas Government Code (TGC), §2001.0225, and determined that the rulemaking is not subject to TGC, §2001.0225(a) because it does not meet the definition of a "Major environmental rule" as defined in TGC, §2001.0225(g)(3). The following is a summary of that review.

Section 2001.0225 applies to a “Major environmental rule” adopted by a state agency, the result of which is to exceed standards set by federal law, exceed express requirements of state law, exceed requirements of delegation agreements between the state and the federal government to implement a state and federal program, or adopt a rule 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 or the state.

The Texas Legislature enacted SB 1289, amending the TWC, Chapter 26 (Water Quality Control), Subchapter B (General Water Quality Power and Duties), by adding §26.02715 to the TWC. The intent is to provide more flexibility in TCEQ’s rules for 30 TAC 210 (Use of Reclaimed Water) and in 30 TAC Chapters 321(Control of Certain Activities by Rule), Subchapter P (Reclaimed Water Production Facilities).

SB 1289 directed TCEQ to provide flexibility, through rulemaking, for facilities that use domestic wastewater treated onsite for reuse (reclaimed water), to dispose of any reclaimed water without an additional permit under certain conditions.

A Reclaimed Water Producer is currently authorized to use its treated reclaimed water only if it obtains a permit for an alternative means of disposal during times when there is no demand for its reclaimed water. TCEQ rules also require that the owner of any RWPF authorized by TCEQ, be the owner of a wastewater treatment facility permitted by TCEQ.

SB 1289 instructs TCEQ to promulgate rules that authorize facilities to convey reclaimed water to a willing “associated domestic wastewater treatment facility” and its wastewater collection system, as an “alternative means of disposal,” as required under 30 TAC Chapter 210.

SB 1289 also prohibits TCEQ from requiring an owner of a RWPF to be the owner of the associated domestic wastewater treatment facility that is permitted by TCEQ.

SB 1289 directs TCEQ to amend TCEQ rules in 30 TAC Chapter 321 (Control of Certain Activities by Rule), Subchapter P (Reclaimed Water Production Facilities), which relate to facilities treating domestic wastewater for reuse purposes (“Reclaimed Water”). The simplistic changes to 30 TAC Chapter 210 (Use of Reclaimed Water), Subchapter A (General Provisions) are minor but necessary for clarity and consistency with proposed amended 30 TAC Chapter 321.

Specifically, SB 1289 instructs TCEQ to adopt rules that authorize RWPFs to dispose of treated reclaimed water without an additional permit, if the RWPF disposes of the treated reclaimed water through an “associated domestic wastewater treatment facility” and its wastewater collection system, after receiving consent from the owner and operator of the associated domestic wastewater treatment facility that will receive the reclaimed water for further or final treatment and disposal.

Therefore, the specific intent of the proposed rulemaking is related to providing flexibility, in the form of additional options for facilities that produce reclaimed water, as identified in SB 1289.

Certain aspects of TCEQ's Reclaimed Water Rules are intended to protect the environment or reduce risks to human health from environmental exposure. However, the proposed rulemaking will not adversely affect in a material way the economy, a sector of the economy, productivity, competition, or jobs; nor would the proposed rulemaking adversely affect in a material way the environment, or the public health and safety of the state or a sector of the state. Therefore, the proposed rulemaking does not fit the TGC, §2001.0225 definition of "Major environmental rule."

Even if this rulemaking was a "Major environmental rule," this rulemaking meets none of the criteria in §2001.0225 for the requirement to prepare a full Regulatory Impact Analysis. First, this rulemaking is not governed by federal law. Second, it does not exceed state law but rather amends authorizations in state law and TCEQ rules. Third, it does not come under a delegation agreement or contract with a federal program, and finally, it is not being proposed under the TCEQ's general rulemaking authority. This rulemaking is being proposed under a specific state statute enacted in SB 1289 in the 88th Texas Regular Legislative Session (2023) and implements existing state law. Because this proposal does not constitute a major environmental rule, a regulatory impact analysis is not required.

Therefore, the commission does not adopt the rule solely under the commission's general powers.

The commission invites public comment regarding the Draft Regulatory Impact Analysis Determination during the public comment period. Written comments on the Draft Regulatory

Impact Analysis Determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

TCEQ evaluated the proposed rulemaking and performed an analysis of whether it constitutes a taking under Texas Government Code (TGC), Chapter 2007. The following is a summary of that analysis.

Under TGC, §2007.002(5), "taking" means a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or Section 17 or 19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action and is the producing cause of a reduction of at least 25% in the market value of the affected private real property, determined by comparing the market value of the property as if governmental action is not in effect and the market value of the property determined as if the governmental action is in effect.

The specific purpose of the proposed rulemaking is to implement the legislative amendments to the TWC in SB 1289 by amending TCEQ's Reclaimed Water Rules to expand the regulatory options for disposal of reclaimed water, as identified in SB 1289. The proposed rulemaking will substantially advance the stated purpose of SB 1289 by adopting new rule language that

provides for disposal of reclaimed water without an additional permit under the conditions identified in SB 1289.

Promulgation and enforcement of the proposed rules will not be a statutory or constitutional taking of private real property because, as the commission's analysis indicates, Texas Government Code, Chapter 2007 does not apply to these proposed rules because these rules do not impact private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. Specifically, the proposed rulemaking does not apply to or affect any landowner's rights in any 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. The primary purpose of the proposed rules is to implement SB 1289 by providing for the authorization, under conditions identified in SB 1289, for disposal of reclaimed water without an additional permit when conveyed to an associated domestic wastewater treatment facility. This proposed rulemaking is reasonably taken to fulfill requirements of state law. Therefore, the proposed rulemaking will not cause a taking under Texas Government Code, Chapter 2007.

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 hybrid virtual and in-person public hearing on this proposal in Austin on November 12, 2024 at 10:00 a.m. in Building F, Room 4118 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.

Individuals who plan to attend the hearing virtually and want to provide oral comments and/or want their attendance on record must register by November 7, 2024. To register for the hearing, please email Rules@tceq.texas.gov and provide the following information: your name, your affiliation, your email address, your phone number, and whether or not you plan to provide oral comments during the hearing. Instructions for participating in the hearing will be sent on November 8, 2024, to those who register for the hearing.

For the public who do not wish to provide oral comments but would like to view the hearing may do so at no cost at:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MzdkZDBiNGItNzhhOS00ZDNkLTgzNTEtNGIwZTgwNjRjMWEx%40thread.v2/0?context=%7b%22Tid%22%3a%22871a83a4-a1ce-4b7a-8156-

[3bcd93a08fba%22%2c%22Oid%22%3a%22e74a40ea-69d4-469d-a8ef-06f2c9ac2a80%22%7d](#)

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 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Gwen Ricco, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted at:

<https://tceq.commentinput.com/comment/search>. File size restrictions may apply to comments being submitted via the TCEQ Public Comments system. All comments should reference Rule Project Number 2023-137-321-OW. The comment period closes on November 12, 2024. Please choose one of the methods provided to submit your written comments.

Copies of the proposed rulemaking can be obtained from the commission's website at *https://www.tceq.texas.gov/rules/propose_adopt.html*. For further information, please contact Erika Crespo, Water Quality Division, (512) 239-1827.

SUBCHAPTER A: GENERAL PROVISIONS

§§210.1, 210.2, 210.3, and 210.4

Statutory Authority

The commission proposes these amendments to the Texas Commission on Environmental Quality (TCEQ) rules under the Texas Water Code (TWC). TWC, §5.013 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 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, §5.120 requires the commission to administer the law so as to promote judicious use and maximum conservation and protection of the environment and the natural resources of the state. TWC, §26.02715 authorizes disposal of Reclaimed Water without an additional permit under certain conditions.

The amendments implement Senate Bill 1289, 88th Texas Regular Legislative Session (2023), TWC, §§5.013, 5.102, 5.103, 5.120, and 26.02715.

§210.1. Applicability.

(a) This chapter applies to the reclaimed water producer, provider, and user. [If the entity which is the producer of the reclaimed water is the same as the user, then the use of reclaimed water is permissible only if the use occurs after the wastewater has been treated in accordance with the producer's wastewater permit and the permit provides for an alternative means of disposal during times when there is no demand for the use of the reclaimed water.]

(b) This chapter does not apply to treatment or disposal of wastewater permitted by the commission in accordance with the requirements of Chapter 305 of this title (relating to Consolidated Permits), or to the use[r] of such treated wastewater identified in a water quality [the producer's wastewater discharge] permit authorizing disposal by irrigation. This chapter does not apply to those systems authorized under Chapter 285 of this title (relating to On-Site Wastewater Treatment) which utilizes surface irrigation as an approved disposal method.

(c) If the entity which is the producer of the reclaimed water is the same as the user and:

(1) has a domestic wastewater permit for a domestic wastewater treatment facility that is located at the terminus of the collection system to which the reclaimed water production facility is or will be connected, then the use of reclaimed water is permissible only if the use occurs after the wastewater has been treated in accordance with the producer's wastewater permit and the permit provides for an alternative means of disposal during times when there is no demand for the use of the reclaimed water; or

(2) obtains consent from an associated domestic wastewater treatment facility and collection system to which the reclaimed water production facility is or will be connected to be used as an alternative means of disposal during times when there is no demand for the use of the reclaimed water, then the use of reclaimed water is permissible only if the use occurs after the wastewater has been treated in accordance with the producer's reuse authorization issued under this Chapter.

§210.2. Purpose and Scope.

(a) The purpose of this chapter is to establish general requirements, quality criteria, design, and operational requirements for the beneficial use of reclaimed water which may be substituted for potable water and/or raw water. As defined and specified in this chapter, the requirements must be met by producers, providers, and/or users of reclaimed water. Specific use categories are defined with corresponding reclaimed water quality requirements. These criteria are intended to allow the safe utilization of reclaimed water for conservation of surface and groundwater; to ensure the protection of public health; to protect ground and surface waters; and to help ensure an adequate supply of water resources for present and future needs.

(b) The commission has defined other types of reclaimed water activity in separate regulations, including Chapter 321, Subchapter P of this title (relating to Reclaimed Water Production Facilities), Chapter [§]309[.20] of this title (relating to Land Application of Sewage Effluent), and Chapter [§]297[.1] of this title (relating to Definitions). These regulations do not modify those definitions. The term reclaimed water is limited in scope for the purpose of this rule as defined in §210.3 of this title (relating to Definitions).

(c) Approval by the executive director of a reclaimed water use project under this chapter does not affect any existing water rights. If applicable, a reclaimed water use authorization in no way affects the need of a producer, provider and/or user to obtain a separate water right authorization from the commission.

(d) Reclaimed water projects approved under this chapter do not require a new or amended waste discharge permit from the commission except as provided in §210.5 of this

title (relating to Permits Required). Persons who desire to develop projects not specifically authorized by this chapter may seek authorization pursuant to provisions of Subchapter D or apply for a new or amended waste discharge permit under Chapter 305 of this title (relating to Consolidated Permits).

(e) A producer of reclaimed water must obtain an approved Texas Pollutant Discharge Elimination System (TPDES) permit, Texas Land Application Permit (TLAP), or authorization under 30 TAC Chapter 321, Subchapter P, of this title (relating to Reclaimed Water Production Facilities) prior to commencement of construction and operation of the treatment facility.

§210.3. Definitions.

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

(1) Associated Domestic Wastewater Treatment Facility – a commission-authorized wastewater treatment facility located at the terminus of the collection system that consents to the acceptance of treated effluent, untreated effluent, and sludge from a reclaimed water production facility for final treatment and disposal.

(2) [1] Beneficial use--An economic use of wastewater in accordance with the purposes, applicable requirements, and quality criteria of this chapter, and which takes the place of potable and/or raw water that could otherwise be needed from another source. The use of reclaimed water in a quantity either less than or the economically optimal amount may be considered a beneficial use as long as it does not constitute a nuisance.

(3) [2] BOD₅--Five-day biochemical oxygen demand.

(4) [3] CBOD₅--Five-day carbonaceous biochemical oxygen demand.

(5) [4] CFU--Colony forming units.

(6) [5] Domestic wastewater--Waste and wastewater from humans or household operations that are discharged to a wastewater collection system or otherwise enters a treatment works. Also, this includes waterborne human waste and waste from domestic activities such as washing, bathing, and food preparation, including greywater and blackwater, that is disposed in an on-site wastewater system as defined in Chapter 285 of this title (relating to On-Site Wastewater Treatment).

(7) [6] DRASTIC--A classification system for comparing land units on the basis of their vulnerability to ground-water pollution, a detailed description of which is found in Appendix 1 of this chapter.

Figure 1: 30 TAC 210.3

APPENDIX 1

DRASTIC - An Approach to Ground-Water Pollution Potential Mapping

DRASTIC was developed as a tool for comparing land units on the basis of their vulnerability to ground-water pollution. Artificial classification of natural systems, including aquifers, has been used for years. A system for ranking ground-water pollution potential which took into consideration a relatively large number of parameters had not been developed, however. Through a consensus process, a group sponsored by the National Water Well Association and

the Robert S. Kerr Environmental Research Laboratory developed the methodology described in limited detail here.

DRASTIC is a systematic approach for assessing the ground-water pollution potential of hydrogeologic settings. The DRASTIC system is a methodology which involves delineation of hydrogeologic settings and data analysis to develop a single index number which represents the sensitivity of that setting to ground-water pollution potential. The system to some degree depends on subjective, but skilled judgement by the user (Texas Water Commission, 1989).

Hydrogeologic settings are delineated based on seven parameters which are used to develop an index number for each setting. The parameters have been organized to create the acronym DRASTIC.

DRASTIC stands for:

- D - Depth to water
- R - Annual recharge
- A - Aquifer media
- S - Soil media
- T - Topography
- I - Vadose zone impact
- C - Hydraulic conductivity

After index numbers are developed, maps can be constructed to present a graphic display of the pollution potential. Two maps can be generated using the DRASTIC methodology, a map depicting general vulnerability to ground-water pollution and another specifically aimed at pollution from certain agricultural practices.

A generic contaminant is used for this methodology. The contaminant is introduced at the land surface as a solid or liquid and travels to the aquifer with recharge waters derived from precipitation. Mobility of the contaminant is assumed to be equal to that of groundwater and attenuation processes are assumed to go on in the soil, Vadose zone and aquifer.

Parameters used in the DRASTIC system are divided into ranges with corresponding ratings. Rating values depend on the impact of the factor on contamination potential. The general and agricultural DRASTIC evaluations use the same ranges and rating values, but the weighting of parameters changes. Weighting represents an attempt to define the relative importance of each factor in its ability to affect pollution transport to and within the aquifer and it creates the differences between the general and agricultural indices (Texas Water Commission, 1989).

Two pollution potential numbers, one for generalized pollution sources and one for pollution due to agricultural activities, are derived for each hydrogeologic setting. The formula for the index number is:

$$I = (Dr \times Dw) + (Rr \times Rw) + (Ar \times Aw) + (Sr \times Sw) + (Tr \times Tw) + (Ir \times Iw) + (Cr \times Cw)$$

I = DRASTIC index number
D, R, A, S, T, I, C - parameters

r - rating
w - weight

Maps are labeled with designations for the hydrogeologic settings and pollution potential numbers and the indices are then divided into ranges for color coding of the final maps.

More detailed information may be found in *DRASTIC: A standardized system for evaluating ground water pollution potential using hydrogeologic settings*: U.S. Environmental Protection Agency, EPA/600/2-87/035, authored by L. Allen, T. Bennett, J. H. Lehr, R. J. Petty and G. Hackett.

(8) [7] Edwards Aquifer--That portion of an arcuate belt of porous, water bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally. (See Chapter 213 of this title (relating to Edwards Aquifer).)

(9) [8] Edwards Aquifer Recharge zone--Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, and including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the commission and the Edwards Underground Water District. (See Chapter 213 of this title (relating to Edwards Aquifer).)

(10) [9] Food crop--Any crops intended for direct human consumption.

(11) [10] Initial holding pond--An impoundment which first receives reclaimed water from a producer at the quality levels established by this chapter, not including subsequent holding ponds.

(12) [11] Geometric mean--The n th root of the product of all measurements made in a particular period of time, for example in a month's time, where n equals the number of measurements made. In the alternative, the geometric mean can also be computed as the antilogarithm of the sum of the logarithm of each measurement made. Where any measurement using either computation method equals zero, it must be substituted with the value of one.

(13) [12] l--Liter.

(14) [13] Landscape impoundment--Body of reclaimed water which is used for aesthetic enjoyment or which otherwise serves a function not intended to include contact recreation.

(15) [14] Leak detection system--A system or device designed, constructed, maintained, and operated with a pond that is capable of immediately detecting a release of leachate or reclaimed water that migrates through a liner. The system may typically include a leachate collection system along with either leak detection sensors or view ports.

(16) [15] Municipal wastewater--Waste or wastewater discharged into a publicly owned or a privately owned sewerage treatment works primarily consisting of domestic waste.

(17) [16] mg/l--Milligram per liter.

(18) [17] NTU--Nephelometric turbidity units.

(19) [18] Nuisance--Any distribution, storage, or use of reclaimed water, in such concentration and of such duration that is or may tend to be injurious to or which adversely affects human health or welfare, animal life, vegetation, or property, or which interferes with the normal use and enjoyment of animal life, vegetation, or property.

(20) [19] On-channel pond--An impoundment wholly or partially within a definite channel of a stream in which water flows within a defined bed and banks, originating from a definite source or sources. The water may flow continuously or intermittently, and if intermittently, with some degree of regularity, dependent on the characteristics of the source or sources.

(21) [20] Permit or permitted--A written document issued by the commission or executive director in accordance with Texas Water Code (TWC), §5.581, Chapter 305 of this title (relating to Consolidated Permits), and Chapter 321, Subchapter P of this title (related to Reclaimed Water Production Facilities) which, by its conditions, may authorize the permittee to construct, install, modify, or operate, in accordance with stated limitations, a specified

wastewater treatment or reclaimed water production facility [for waste discharge, including a wastewater discharge permit].

(22) [21] Pond system--Wastewater facility in which primary treatment followed by stabilization ponds are used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria. (See Chapter 217 [317] of this title (relating to the Design Criteria for Domestic Wastewater [Sewerage] Systems).)

(23) [22] Producer--A person or entity that produces reclaimed water by treating domestic wastewater or municipal wastewater, in accordance with a permit or other authorization of the commission [Agency], to meet the quality criteria established in this chapter.

(24) [23] Provider--A person or entity that distributes reclaimed water to a user(s) of reclaimed water. For purposes of this chapter, the reclaimed water provider may also be a reclaimed water producer.

(25) [24] Reclaimed water--Domestic or municipal wastewater which has been treated to a quality suitable for a beneficial use, pursuant to the provisions of this chapter and other applicable rules and permits.

(26) [25] Restricted landscaped area--Land which has vegetative cover to which public access is controlled in some manner. Access may be controlled by either legal means (e.g.

state or city ordinance) or controlled by some type of physical barrier (e.g., fence or wall).

Example of such areas are: golf courses; cemeteries; roadway rights-of-way; median dividers.

(27) [26] Restricted recreational impoundment--Body of reclaimed water in which recreation is limited to fishing, boating and other non-contact [non-contract] recreational activities.

(28) [27] Single grab sample--An individual sample collected in less than 15 minutes.

(29) [28] Spray irrigation—Application of finely divided water droplets using artificial means.

(30) [29] Subsequent holding pond--A pond or impoundment which receives reclaimed water from an initial holding pond where the quality of the water changes after management in the initial holding pond, due to factors which may include:

(A) the addition of water occurs such as contributions from surface water or ground water sources, but not including contributions of reclaimed water, domestic wastewater, or municipal wastewater;

(B) some type of utilization of the reclaimed water for a beneficial use occurs; or

(C) commingling of reclaimed water with surface water runoff where it occurs between storage in an initial holding pond and the subsequent holding pond.

(31) [30] Surface irrigation--Application of water by means other than spraying so that contact between the edible portion of any food crop and the irrigation water is prevented.

(32) [31] Type I reclaimed water use--Use of reclaimed water where contact between humans and the reclaimed water is likely.

(33) [32] Type II reclaimed water use--Use of reclaimed water where contact between humans and the reclaimed water is unlikely.

(34) [33] Unrestricted landscaped area--Land which has had its plant cover modified and access to which is uncontrolled. Examples of such areas are: parks; school yards; greenbelts; residences.

(35) [34] User--Person or entity utilizing reclaimed water for a beneficial use, in accordance with the requirements of this chapter. A reclaimed water user may also be a producer or a provider.

§210.4. Notification.

(a) Before providing reclaimed water to another for a use allowable under this chapter, the reclaimed water provider shall notify the executive director and obtain written approval to provide the reclaimed water. The notification shall include:

(1) a description of the intended use of the reclaimed water, including quantity, quality, origin, and location and purpose of intended use;

(2) a clear indication of the means for compliance with this chapter, including documentation that a user will be apprised of their responsibilities under this chapter as a part of the water supply contract or other binding agreement;

(3) evidence in a water supply contract or other binding agreement of the provider's authority to terminate reclaimed water use that is noncompliant with this chapter; and

(4) an operation and maintenance plan that is required under ordinance or is to be a part of the water supply contract or other binding agreement, where applicable, and which shall contain, as a minimum, the following:

(A) a labeling and separation plan for the prevention of cross connections between reclaimed water distribution lines and potable water lines;

(B) the measures that will prevent unauthorized access to reclaimed water facilities (e.g., secured valves);

(C) procedures for monitoring reclaimed water transfers and use;

(D) steps the user must utilize to minimize the risk of inadvertent human exposure;

(E) schedules for routine maintenance;

(F) a plan for carrying out provider employee training and safety relating to reclaimed water treatment, distribution, and management; and

(G) contingency plan for remedy of system failures, unauthorized discharges, or upsets.

(b) If the provider is not the producer, a description of the origin of the reclaimed water, its quality based upon the parameters contained in the underlying [waste discharge] permit(s) described in §210.2(e) of this title (related to Purpose and Scope), as applicable, and a signed agreement from the producer authorizing the transfer of the reclaimed water to the provider. If applicable, a reclaimed water provider or user may need to obtain a separate water right authorization from the commission.

(c) A producer who chooses to use reclaimed water for a beneficial use only within the boundaries of a wastewater treatment facility permitted by the commission, may do so without notification otherwise required by this section. In such instances, the producer is still required to comply with all applicable requirements of this chapter pertaining to the reclaimed water use.

(d) If effluent is to be used for irrigation within the Edwards Aquifer recharge zone, plans and specifications for the disposal system must be submitted to the executive director for review and approval prior to construction of the facility in accordance with Chapter 313 of this title (relating to Edwards Aquifer).

(e) Major changes from a prior notification for use of reclaimed water must be approved by the executive director. A major change includes:

(1) a change in the boundary of the approved service area not including the conversion of individual lots within a subdivision to reclaimed water use;

(2) the addition of a new producer;

(3) major changes in the intended use, such as conversion from irrigation of a golf course to residential irrigation; or

(4) changes from either Type I or Type II uses to the other.