

July 25, 2019

Britton Dotson

Tennessee Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

Re: Proposed New Tennessee State Rule Chapter 0400-40-06

Dear Mr. Dotson:

The Tennessee Water Advisory Council (TNWAC), comprised of members from the Kentucky-Tennessee Water Environment Association (KY-TN WEA) and the Kentucky/Tennessee Section of the American Water Works Association (KY/TN AWWA), offers the following comments and recommendations on the proposed regulations for your consideration. We note that the Board of Water Quality, Oil and Gas is the governmental body that is responsible for promulgating these regulations which, as written, are limited to the implementation of the Tennessee Water Quality Control Act.

The regulations should authorize a broader list of non-potable reuse activities including reuse in impoundments, environmental reuse and groundwater recharge for non-potable reuse. Additionally, to facilitate public acceptance of beneficial reuse, the regulations should also include more stringent minimum water quality requirements for certain types of reuse.

Preamble

1. The first sentence of the 3rd paragraph begins with, "The land application rule..." and suggests that the entire set of regulations pertains to land application. This sentence should be reworded for clarity as follows:

The provisions of 400-40-.06 .06 Land Application, would resolve compliance issues experienced by a number of decentralized wastewater systems around the state.

2. The 4th paragraph suggests that non-potable reuse provides a benefit by reducing wastewater discharge and conserving water; however, subsequent provisions that would limit reuse because of a reduction in 7Q10 flow indicate that the Board does not consider reducing wastewater discharge to be a benefit. The preamble to these regulations should be clear on the intent with regard to reuse.
3. The preamble should include an explanation as to why this set of regulations does not contemplate potable reuse and state that the Board has the authority to promulgate potable reuse within Tennessee's existing statutory framework.
4. The statement "...resolve several pending permit appeals..." should be deleted as it implies a retroactive enforcement of a future rule.

5. The preamble notes “completed guidance concerning nonpotable reuse of treated wastewater...” Does this refer to the 2016 Permit Writers’ Guidance and if so, was that document shared with the regulated community or the public? Please clarify this reference and cite the document being referenced.

0400-40-06-.01 Purpose

6. The first sentence refers to non-discharging treatment works and sewerage systems. Neither treatment works nor sewerage system are defined in the proposed regulations; however, both are subsequently referred to in 0400-40-06-.03 and 0400-40-06-.05, with sewerage systems also referred to in 0400-40-06-.08, 0400-40-06-.09 and 0400-40-06-.11.

A definition for sewerage systems is given in 0400-40-05-.02 (82), which is inclusive of all systems for collection, treatment and disposal of wastewater. In the proposed regulations, sewerage system seems to refer to wastewater collection and treatment works to the treatment system. Additionally, the proposed regulations include a definition for wastewater facility that is similar to the definition of sewerage system in 0400-40-05-.02 (82).

For clarity and consistency, the definition of sewerage system from 0400-40-05-.02 (82) should be adopted and the first sentence reworded as follows:

State Operating Permits (SOPs) authorize the operation of non-discharging sewerage systems in compliance with permit conditions.

7. This section also refers to “waters”; however, the proposed regulations do not define “waters”. The definition of “waters” established in the TWQCA should be included in this regulation.
8. The regulations do not authorize activities other than land application; animal feeding operations; pump and haul; collection systems and non-potable reuse. Therefore, the sentence that begins with, “SOPs impose such conditions...” should be reworded for clarity as follows:

The SOPs issued pursuant to these regulations impose such conditions, including effluent standards and conditions and terms of periodic review, as are necessary to prevent pollution of waters from the operation of the following non-discharging wastewater systems: land application; animal feeding operations; pumping and hauling; collection and conveyance; and non-potable reuse.

9. The regulations specifically exclude septic tanks connected to subsurface drainfields that are covered by Chapter 0400-48-01 but do include large community septic systems. These systems are not addressed in 0400-40-06, which currently include the provisions regarding state operating permits, nor do they appear to be addressed in 0400-48-01. How were these systems previously regulated? Should they instead be regulated under 0400-48-01? Note that some of the subsequent comments refer to large community systems and would no longer be applicable should they be included in a separate set of regulations.
10. The regulations as proposed include large community systems; therefore, the last sentence should also refer to 0400-48-01.

0400-40-06-.02 Definitions

11. The definitions should be numbered to be consistent the numeration in 0400-40-05.
12. The following definition should be included for the term, discharge:

“Discharge” refers to the addition of pollutants to waters from a source.

13. “Dry-weather intermittent ponding” There are no references in the regulations to this term. Therefore, it should be deleted.
14. “Full utilization of the land application area” There are no references in the regulations to this term. Therefore, it should be deleted.
15. “Land application” The definition should be modified to more clearly reflect that for the purposes of this regulation, the soil matrix is part of the treatment system as indicated below:

“Land application” means the intentional disposal of treated wastewater into a soil matrix having depth and structure sufficient to assimilate the designed hydraulic load and provide additional treatment.

16. “Land application area” Since many systems receive wastewater that receives treatment equivalent to secondary, this definition should not simply refer to “partially-treated” wastewater and should be modified as indicated below:

“Land application area” means an area of suitable soil used for the application of treated wastewater for the purpose of maximizing the disposal of wastewater that receives full biological treatment as well as wastewater that is partially treated in the case of large community septic systems.

17. “Non-potable reuse of reclaimed water”: The definition should be revised to include the classifications from 0400-40-06-.10 (2). Note that regulatory language from (e), (f) and (g) was deleted since it is recommended to be included in 0400-40-06-.10 (1) (c) 6.

“Non-potable reuse of reclaimed wastewater” is the planned and intentional reuse of reclaimed wastewater that does not involve direct production of potable water and includes the following:

(a) Unrestricted Urban Reuse. The use of reclaimed wastewater for non-potable applications in municipal settings where public access is not restricted.

(b) Restricted Urban Reuse. The use of reclaimed wastewater for non-potable applications in municipal settings where public access is controlled or restricted by physical or institutional barriers, such as fencing, advisory signage, or temporal access restrictions.

(c) Agricultural Reuse for Food Crops. The use of reclaimed wastewater to irrigate food crops that are intended for human consumption; in addition to this chapter, US Department of Agriculture and other rules may apply.

(d) Agricultural Reuse for Processed Food Crops and Non-Food Crops. The use of reclaimed wastewater to irrigate crops that are either processed before human consumption or not consumed by humans; in addition to these rules, US Department of Agriculture and other rules may apply.

(e) Reuse in Impoundments with Unrestricted Access. The use of reclaimed wastewater in an impoundment in which no limitations are imposed on body-contact water recreational activities.

(f) Reuse in impoundments with Restricted Access. The use of reclaimed wastewater in an impoundment where body contact is restricted.

(g) Environmental Reuse. The use of reclaimed wastewater to create, enhance, sustain or augment water bodies including wetlands, aquatic habitats, or stream flow.

(h) Industrial Reuse. The use of reclaimed wastewater in industrial applications and facilities, power production, and extraction of fossil fuels.

(i) Groundwater Recharge for Non-potable Reuse. The use of reclaimed wastewater to recharge aquifers that are not used as a potable water source.

Note that reuse as defined in (e), (f) and (g) may also require NPDES permitting through 400-40-05 in addition to these regulations.

18. “Ponding” The definition should be reworded for clarity as follows:

“Ponding” means standing water on the ground surface.

19. The following definition for “reclaimed wastewater” should be added to the regulations.

“Reclaimed wastewater” means wastewater that has been treated to levels suitable for reuse purposes, which at a minimum are established in 0400-40-06-.10 (4) (c).

20. As indicated in Comment #6, the following definition should be included for the term, Sewerage system consistent with the TWQCA and 0400-40-05-.02 (82).

“Sewerage system” means the conduits, sewers, and all devices and appurtenances by means of which sewage and other waste is collected, pumped, treated, or disposed.

21. “Wastewater facility” For clarity and consistency, this definition should be deleted and any reference to “wastewater facility” be replaced with sewerage system.

22. As indicated in Comment #7, the following definition should be included for the term “waters” consistent with the TWQCA and 0400-40-05-.02 (95).

“Waters” means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in

single ownership which do not combine or effect a junction with natural surface or underground waters.

0400-40-06-.03 Permit Application, Issuance

23. (1) For clarity and consistency, consider replacing “wastewater system” with “sewerage system.”
24. (5) For clarity and consistency, consider replacing “treatment works” with “sewerage system.”
25. (6) The provisions regarding issuance of permits to person(s) seems to indicate that the entities mentioned are no longer considered "persons" under the TWQCA. The provision should be revised to read as follows:

(6) The Commissioner shall issue permits only to a person or persons subject to the following limitations on corporations, limited liability companies or limited liability partnerships:

(a) Corporations, limited liability companies, or limited liability partnerships must be in good standing with the Tennessee Secretary of State in order to be eligible for permit coverage and

(b) Out-of-state corporations, limited liability companies, or limited liability partnerships must be registered with the Tennessee Secretary of State in order to be eligible for permit coverage.

26. (9) “...preclude adequate treatment of the wastewater...” is vague and is relative to the differences noted between land application and land treatment. Suggest this be referenced to the ponding limitations cited elsewhere.

0400-40-06-.04 Notice and Public Participation.

27. (10) Consider rewording this provision as follows:

Interested persons may request in writing that the Commissioner hold a public hearing on any application. The request shall be filed as soon as practicable within the period allowed for public comment and shall indicate the interest of the party filing it and the water quality reasons why a hearing is warranted. If there is a significant public interest in having a hearing to address water quality concerns or Tennessee Water Quality Control Act requirements, the Commissioner shall hold a hearing in the geographical area of the proposed discharge. Instances of doubt should be resolved in favor of holding the hearing.

0400-40-06-.05 General Terms and Conditions

28. (4)(b) Discharges as defined by the Clean Water Act are the introduction of pollutants to waters. The TWQCA similarly defines discharges; however, it also refers to “discharged substances” that could likely move into waters as activity needing a permit. A federal NPDES

permit is required for discharges to waters but not for discharged substances that could likely enter waters. An SOP is the appropriate regulatory mechanism for activities that are not regulable under NPDES. This provision should be reworded as follows:

- (b) *There shall be no discharge to any surface waters except as separately authorized by an NPDES permit.*
29. (4)(c) Subsurface land application and certain reuse systems that are addressed in these regulations do introduce fluids to groundwater and are considered Class V injection wells subject to permitting under the UIC program. This language as written seems to indicate that such activities may not be authorized under these regulations and should be revised as follows:
- (c) *Activities subject to this regulation that introduce fluids to groundwater must also obtain an authorization under the Underground Injection Control permit program.*
30. (4)(h) This paragraph should be reworded to remove the term “treatment works.”

0400-40-06-.06 Land Application

31. It seems inconsistent that the Board proposes to require alternatives analysis for reuse (400-40-05-.05(3) and reserves the right to limit it based on potential reductions in 7Q10), but not contemplate similar restrictions should wastewater be diverted from a receiving stream to a dedicated land application site.
32. (1) (a) 1.
- a. The effluent quality cited should be considered a minimum level of treatment and noted as such as indicated below:

Domestic and/or municipal wastewater disposed of by land application shall achieve, as a minimum, the following effluent quality prior to land application:
 - b. To be consistent with other treatment requirements applicable to municipal and domestic wastewater, limits for BOD/CBOD and TSS should be the same as those established in 400-40-05-.09(1) (a) and (b).
 - c. What is the basis for the ammonia limit of 22 mg/l and how does it relate to the loading requirements established in (2) (b) (1)?
33. (1) (a) 2. Are the application rates for the septic tank effluent the same as for treated domestic and/or municipal wastewater?
34. (1)(b) Ponding. Is there a concern with subsurface systems ponding during wet weather?
35. (1)(d) Inspections. Suggest replacing “wastewater facility” with “sewerage system.”
36. (2) What is the basis for the 150 % safety factor for sizing the land application area?

37. (3) Construction. This section only pertains to drip irrigation. Construction standards for spray irrigation systems should also be included.

0400-40-06-.10 Non-Potable Reuse.

38. (1) (a)

- a. The phrase, "...and is not intended to be applied in excess of the uptake rate of vegetation..." is more appropriate to the provisions applicable to land application (0400-40-06-.06) than the provisions applicable to these provisions.
- b. The statement, "Moreover, the Division reserves the right to limit non-potable reuse of reclaimed wastewater that causes a greater than five percent reduction of the 7Q10 flow of the receiving stream." suggests that the state of Tennessee has a right to "wastewater to be discharged." But no such right is established in the TWQCA since wastewater is not included in the definition of waters. T.C.A. 69-3-108 (b) does establish the parameters for regulating the alteration of waters of the state through permits, including the withdrawal of state waters for non-agricultural uses. However, a reduction in the volume discharged to state waters would not be considered an alteration since the water discharged is not state waters. For these reasons, that statement should be deleted from the proposed regulations.

Additionally, as noted in (1)(c), there is no regulatory basis for prohibiting reuse in impoundments with restricted access, reuse in impoundments with unrestricted access, environmental reuse, and groundwater recharge for non-potable reuse. These activities would require additional regulatory approval as set out in 0400-40-06-.05 (4) (b) and (c).

39. (1) (b) 1. – Should the reference be to 0400-40-06-.06 and not 0400-40-06-.07?

40. (1) (b) 4. Does this include reuse water for irrigation landscaped areas and other non-industrial type processes? If so, then the likelihood of human contact increases and the activity should be permitted as unrestricted public access.

41. (1) (c)

- a. Suggest replacing "The following activities are prohibited" with the following language since there is nothing in state or federal law to prohibit the listed activities.

(c) The following activities are not authorized under 0400-40-06-.10 Non-Potable Reuse.

- b. (c) 1. Recommend deleting any reference to potable reuse since this provision clearly applies only to non-potable reuse.
- c. Recommend revising (c) 5 and 6. to read

5. The discharge of reclaimed wastewater into surface waters as they are regulated through the NPDES program.

6.Excess utilization of reclaimed water that results in ponding or a nuisance to adjacent properties.

42. (2) Suggest that the definitions of the non-potable use classifications be moved to 0400-40-05-.02 with some recommended edits.

43. (3)(a) 2. This provision does not distinguish between the quality of non-potable reclaimed wastewater from other wastewaters and should be revised to read as follows:

Non-potable reclaimed wastewater and potable water systems should be located at least 10 feet horizontally, or at least 18 inches vertically, apart from each other if practicable. However, if the non-potable reclaimed wastewater and potable water systems are located within 10 feet horizontally and 18 inches vertically of each other, the non-potable reclaimed wastewater system shall be treated as if it were conveying wastewater that does not meet the treatment requirements of (4) (c).

44. (2) (d) 1. Since non-potable reuse and land application are both covered by SOPs, the application for the reuse SOP could also include a request to authorize both the land application contingency.

45. (2) (d) 2. Does this refer to a permitted reuse activity that no longer has the proposed alternative?

46. (4) (c)

- a. Add, “Reuse in Impoundments, Environmental Reuse and Groundwater Recharge for Non-Potable Reuse” after “Agricultural Food Crops” in the table.
- b. The minimum standards established for E. coli and chlorine residual for unrestricted reuse are less stringent than the existing requirements in some permits that allow unrestricted reuse.
- c. Public acceptance of reuse is dependent upon a robust regulatory framework, and exceptional operation by practitioners. For this reason, it is recommended that the Board establish a 23 cfu/100 ml limit for E.coli and a minimum chlorine residual limit at 1 mg/l regardless of E. coli concentration; and require that a chlorine residual be maintained within the reuse transmission and distribution system.
- d. To address these concerns, it is recommended that the table on page 21 be revised as shown below:

Parameter	Urban Unrestricted, Agricultural Food Crops, Reuse in Impoundments, Environmental Reuse, Groundwater Recharge for Non-Potable Reuse		Urban Restricted, Agricultural Processed Food or Non-food crops, Industrial Reuse	
	Daily Limit	Monitoring Frequency	Daily Limit	Monitoring Frequency
pH	6.0-9.0	Weekly	6.0-9.0	Weekly
CBOD ₅	10 mg/L	Weekly	30 mg/L	Weekly
NTU or TSS	5 NTU 5 TSS mg/L	Continuous Daily	30 mg/L	Weekly
E. coli	23 cfu/100 mL	Daily	200 cfu/100 mL	Daily
Chlorine residual (4)	Minimum of 1 mg/L (1)	Daily	Minimum of 1 mg/L (2)	Daily

(1) The minimum chlorine residual limit of 1 mg/l shall be measured at the point of release from the reclamation system and the chlorine residual must be maintained within the distribution system as measured in accordance with the approved RWMP plan.

(2) Chlorine residual limits apply only upon failure to comply with E. coli limits more than 10% of the time for the previous month after there is a demonstration that the system can meet the delivery standards.

47. (4) (d) 1. (iii) Although discharge of reclaimed water is not authorized under the proposed rules, it may be allowed under an NPDES permit. Therefore, the reporting requirement for discharges or releases, should distinguish between those that are included in the RWMP and those that are not. The language as written suggests that any release or discharge is a violation.

On behalf of the Tennessee Water Utility Council, we appreciate your consideration of these comments.

Sincerely,



Saya Ann Qualls, PE
Tennessee Government Affairs Chair
KY-TN WEA



Hal Balthrop, PE
Tennessee Water Utility Council Chair
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