



INFILTRATOR®

water technologies

June 24, 2015

Wyoming Department of Environmental Quality
Water Quality Division
122 West 25th Street
Hershler Building 4-W
Cheyenne, WY 82002

Re: Comments on Proposed Revisions to the Water Quality Rules and Regulations
Chapter 25, Small Wastewater Systems

To Whom It May Concern,

Infiltrator Water Technologies, LLC (Infiltrator) appreciates the opportunity to make further comment on the proposed revisions to the Water Quality Rules and Regulations, Chapter 25, Small Wastewater Systems (Draft Regulations).

For the record, Infiltrator has previously submitted comments on the Draft Regulations. (A copy of our most recent comment letter, dated May 24, 2013, accompanies the hard copy of this letter, and is referenced herein.) Several of the suggestions we made have been incorporated into the present document, and we appreciate the Water Quality Division's (Division's) consideration of these comments.

Our latest comments are provided below by section number. We use as a reference the most recent iteration of Chapter 25, which is labeled "Draft 5/05/15".

Section 7. Soil Absorption System Sizing

Section 7 is on pages 25-8 through 25-10, and encompasses lines 319 through 388, of the Draft Regulations. As the title states, this section specifies the criteria by which the total infiltration surface area of a soil absorption system is to be calculated. Types of systems contemplated in this section include standard (distribution pipe and gravel media) trenches in subsection (b)(i), chamber trenches in subsection (b)(ii), and bed systems in subsection (b)(iii). No other system types are addressed in this section.

Chamber System Sizing Reduction in Bed System Applications:

The bed system subsection (b)(iii) of Section 7 includes no system sizing credit for the use of chamber technology as compared to standard (distribution pipe and gravel) media (lines 372-384). Whereas the chamber trench subsection (b)(ii) includes a 30% reduction in calculating the effective bottom width of a chamber product (lines 349-371, and specifically both lines 358-359 and 363-364), no such multiplier is included in the bed subsection. Infiltrator believes that this must simply be an oversight.

Chambers have long been designed and installed in the State of Wyoming in both trench and bed configurations. For over 25 years, up to and including today, chamber systems have been

sized in trench configurations with a 50% bottom area reduction, and in bed applications with a 40% bottom area reduction, as compared to the size of a standard (distribution pipe and gravel) system. In the proposed Draft Regulations, the bottom area sizing reduction in trench applications has been reduced to 30% (lines 363-364). Infiltrator has supported this change (see previous comments). However, there is no reference to a bottom area reduction in the bed subsection (b)(iii) of Section 7 (lines 372-384). It makes absolutely no sense to eliminate the reduction for chamber bottom area in bed applications – particularly now that it has been modified to a more conservative efficiency factor.¹ Our previous submittals include all of the information necessary to support inclusion of reduced chamber system sizing in bed, as well as trench, system applications.

To accomplish this, infiltrator requests that Section 7 be modified as follows:

First, the bed system subsection (b)(iii) would be modified by simply adding the word "standard" to the introductory sentence of the subsection (line 382) between the words "For" and "bed" to read:

(iii) For standard bed systems, the total ...

The remainder of the subsection would remain unchanged. This would be totally consistent with subsection (b)(i) above (lines 347-364).

In addition, a new subsection (b)(iv) would be introduced to address chamber sizing in bed applications. It would read much the same as the standard bed system subsection, with the exception of the addition of the bottom area effectiveness factor (E as opposed to W), and introduction of the term "rows" (R). We suggest the following language:

(iv) For chamber bed systems, the total infiltration area shall be calculated based on the following formula:

$$A = L(E \times R)$$

A = Total infiltration area

L = Total length of bed

E = Effective bottom width of the chamber (Multiply width of the chamber by factor of 1.43 to get effective bottom width of chamber)

R = Number of chamber rows (Multiply effective bottom width of chamber by number of chamber rows to get effective bottom width of bed)

(A) The factor of 1.43 incorporates a thirty percent (30%) reduction of the bottom area.

¹ With the change to a 30% reduction in the efficiency factor for chamber bottom area from 50% and 40% in trench and bed system applications, respectively, as proposed in the Draft Regulations, all chamber systems in Wyoming will increase in size in the future. Infiltrator estimates that chamber trench system bottom area will increase by more than 20%, and bed system bottom area – if the 30% reduction is included in the Draft Regulations as requested above – will increase in by more than 30%.

(B) The sidewall credit shall not be used in calculating the total infiltration area for a bed system.

Section 9. Septic Tanks and Other Treatment Tanks.

Section 9 is on pages 25-11 through 25-17, and encompasses lines 423 through 686, of the Draft Regulations. As the title states, this section specifies the criteria for design, manufacture, configuration, and use of septic and other treatment tanks.

Materials

Subsection (a)(i) of Section 9 of the proposed Draft Regulations contemplates septic tanks manufactured using "concrete and fiberglass or an approved material" (lines 427-432). Approximately 1 in 10 septic tanks installed in North America is fabricated using thermoplastic materials (polypropylene or polyethylene). The use of thermoplastic tanks is a growing national trend, particularly in recent years as thermoplastic tank design advancements have been introduced into the marketplace. Section 7 of the American national standard for prefabricated tank manufacturing, IAPMO/ANSI Z1000-2013, is specifically dedicated to identifying specifications for thermoplastic tank manufacture. As such, Infiltrator proposes the addition of this material to the Wyoming rules, as follows (lines 427-428):

Septic tanks shall be fabricated or constructed of concrete, fiberglass, thermoplastics, or an approved material...

Infiltrator suggests that this will simplify the review process for the Division, by eliminating that aspect of a given review which relates to materials.

Minimum Height of Clear Space Over Tees:

Subsection (a)(iv)(E)(III) of Section 9 of the proposed Draft Regulations requires a minimum of 3 inches of clear space over the top of the baffles or tees (lines 482-483). Every state other than Wyoming allows less than 3 inches of clear space above the top of baffle or tee. IAPMO/ANSI Z1000-2013, the American national standard for prefabricated septic tank material, properties, and manufacturing, requires only 1 inch of space (see extended discussion in previous submittal).

It is universally understood that the function of providing a clear space above the inlet tee is to promote air flow and prevent a vapor lock from occurring within the septic tank. With function tied to air flow, Infiltrator submits that any air space greater than 1 inch will be superfluous, and provide no improvement to tank performance. However, such a requirement will in fact increase the amount of material a septic tank manufacturer needs to use for fabrication of a tank, which will increase costs to consumers without providing any additional benefit.

In addition, subsection (a)(vi) of section 9 of the proposed Draft Regulations requires that access shall be provided to each compartment of the septic tank for inspection and cleaning (lines 500-508). Subection (a)(vi)(A) requires that both inlet and outlet devices be accessible (lines 503-504). Finally, subsection (a)(vi)(B) requires that risers extend to at least 6 inches of final grade (lines 506-507). All of these requirements combine to ensure that there will be a riser located above the inlet tee. The requirement of a riser above the inlet tee renders a minimum clear space specification moot on all future approved tank installations in Wyoming.

Infiltrator again requests that the minimum clear space requirement over tees be reduced to 1 inch. Infiltrator is not requesting that this specification be altered with respect to baffles. Therefore, we request the following changes to Section 9(a)(iv)(E):

First, remove the reference to tees in subsection (a)(iv)(E)(III) (lines 482-483):

(III) *A minimum of three (3) inches of clear space shall be provided over the top of the baffles or tees.*

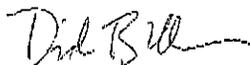
Second, insert a new subsection that revises this specification with respect to tees:

IV. *There shall be a separation of at least 1 inch between the top of the tank and the top of the inlet and outlet tees.*

Finally, as a result of the insertion of a new subsection, existing subsection (a)(iv)(E)(IV) would have to be designated (a)(iv)(E)(V).

Infiltrator would like to make public comments at the public hearing to be held on July 8, 2015 in Casper. Our comments will be directed towards only those issues raised in this letter, and we will not be using a digital presentation.

Sincerely,



Dick Bachelder
Senior Regulatory Specialist

cc: Mr. William Tillman, Wyoming DEQ, Water Quality Division
Mr. David Lentz, P.E., Infiltrator Water Technologies, LLC
Mr. Eric Berquist, Infiltrator Water Technologies, LLC
Mr. Matt Gibbs, Infiltrator Water Technologies, LLC