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MEMORANDUM

October 27, 2006

To: Aquifer Protection Section Central Office
Aquifer Protection Section Regional Supervisors
Construction Grants and Loans Section
Interested Parties

From: Ted L. Bush, Jr., Chief 
Aquifer Protection Section

Subject: High Rate Infiltration System Designs:
Policy for Alternative Setbacks to Property Lines and Habitable Residences

In response to inquiries from private consultants and others, the Division offers the following guidance on the setback requirements for high rate infiltration units. Currently, Rule 15A NCAC 2T .0706(a) requires that all high rate infiltration units be 400 feet from habitable residences under separate ownership (i.e., not owned by the Permittee), and 200 feet from any property line.

Based upon the inquiries received, it is anticipated that numerous proposals may include engineering designs with higher levels of wastewater treatment, if the setback distances can be lowered. Rather than review these requests on a case-by-case basis under the Alternative Design Criteria Rule [15A NCAC 2T .0105(n)], high rate infiltration units may have alternative setbacks to certain habitable residences and property lines if they meet all of the following six criteria:

- 1. Effluent disposed in a high rate infiltration system shall meet or exceed the most stringent effluent standards in both Rule 15A NCAC 2T .0705(b) and .0906(a) as shown below.

Parameter	Monthly Average	Daily Maximum
Five Day Biochemical Oxygen Demand (BOD ₅)	10 mg/l	15 mg/l
Ammonia-Nitrogen (NH ₃ -N)	4 mg/l	6 mg/l
Total Suspended Solids (TSS)	5 mg/l	10 mg/l
Nitrate-Nitrogen (NO ₃ -N)	10 mg/l	
Fecal Coliform	14 per 100 ml	25 per 100 ml
Turbidity		10 NTU

- 2. In accordance with the criteria of Rule 15A NCAC 2T .0908(c), duality shall be provided for all essential treatment units.



3. In accordance with the criteria of Rule 15A NCAC 2T .0908(d), continuous online monitoring and recording of the treatment plant effluent for turbidity prior to storage, distribution or infiltration.
4. In accordance with the criteria of Rule 15A NCAC 2T .0908(e), all treatment plant effluent that does not meet either the 10 NTU turbidity limit or the 25 per 100 milliliters (ml) fecal coliform daily maximum shall be diverted to a lined five (5) day upset pond where it shall be stored until it can be reintroduced to the treatment plant headworks for re-treatment.
5. In accordance with the criteria of Rule 15A NCAC 2T .0908(f), the five (5) day upset pond shall have restricted public access and shall have a natural or synthetic liner with a hydraulic conductivity of at least 1×10^{-6} centimeters per second (cps).
6. In accordance with the criteria of Rule 15A NCAC 2T .0908(i), a certified operator of a grade equivalent or greater than the facility classification shall be on call 24 hours per day.

Complying with the above six (6) criteria, as well as all applicable Rules in 15A NCAC 2T .0100 and .0700 shall demonstrate that the system design is comparable to the applicable design requirements spelled out in 15A NCAC 2T .0706(a), as long as the following alternative setbacks are maintained:

Parameter	Setback (ft)		
	Spray	Drip	Basin
Any offsite (i.e., outside the development property lines) habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	400	100	100
Any onsite (i.e., within the development property lines) habitable residence or place of public assembly under separate ownership not to be maintained as part of the project site	50	50	50
Any onsite (i.e., within the development property lines) habitable residence or place of public assembly owned by the Permittee to be maintained as part of the project site	50	50	50
Any property line	50	50	50

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