



Division of Water Resources

NSAB Oct 5, 2018

Remediating Discharging Sand Filters

Remedying Discharging Sand Filters

- Residential onsite wastewater systems
- Replace with alternate load reduction measure
- Reduce nutrient loading to surface water
- An individual practice (not programmatic)



3 creditable remedies

1. Upgrade: Discharging TS-II Equivalent System
2. Upgrade: TS-II w/Subsurface Soil Dispersal System
3. Connect: to Permitted Major NPDES System



Loading Rates

- Different types of sand filters
- Different Remedies (TS-II Equivalent Systems)
- # of people using the system
- Results in a range of credit

Range in credit (2-5 Bedrooms)

- Upgrade (1&2)
- Nitrogen 4.5 lb/yr - 27.01 lb/yr
- Phosphorus (-1.35) lb/yr - 6.6 lb/yr

Connect to WWTP (3)

- Nitrogen 6.6 lb/yr - 27.38 lb/yr
- Phosphorus 1.35 lb/yr - 6.66 lb/yr

Rules and Permits

15A NCAC 18A Section .1900 (Rules .1969 and .1970)

- which refers to the NC laws and rules for sewage treatment and disposal systems
- Onsite Wastewater Protection Branch (OWPB) DHHS
- Installation / Operation / Maintenance

NCG550000 & NCG570000

- Surface discharge permits for single family residences
- DWR



Credit determination

- Subtract remedy load rate from current load rate
- Multiply by # of people (based on bedrooms: 1.5-3.7)

Credit rate (lb/cap/yr)

N 3.0 - 7.4

P 0.9 - 1.8

Credit Range (lb/yr)

1.5 - 27.38

1.35 – 6.66

Credit determination

- Subtract remedy load rate from current load rate
- Multiply by # of people (based on bedrooms)

| | Credit Rate (lb/cap/yr) | # people | Credit Range (lb/yr) |
|---|-----------------------------|----------|-------------------------|
| N | 3.0 - 7.4 | 1.5-3.7 | 1.5 - 27.38 |
| P | 0.9 - 1.8 | | 1.35 – 6.66 |

TN Load Reduction Credit Matrix

| | System | | | |
|--|------------------------------|--|--------------------------------------|----------------------------------|
| | DSF Loading Rate (lb/cap/yr) | Discharging TS-II Equivalent | TS-II WITH Subsurface Soil Dispersal | Connection to major NPDES System |
| | | Remedy System Loading Rate (lb/cap/year) | | |
| | | 4.4 | .13 | 0* |
| Types of DSFs | | Credit Rate | | |
| Single-pass w/ regular discharges | 7.4 | 3.0 | 7.3 | 7.4 |
| Single-pass w/ no or infrequent discharges | 7.4 | 3.0 | 7.3 | 7.4 |
| Recirculating filters and other advanced discharging systems | 4.4 | 0 | 4.3 | 4.4 |
| Malfunctioning discharging systems | 7.4 | 3.0 | 7.3 | 7.4 |

TP Load Reduction Credit Matrix

| | System | | | |
|--|------------------------------|--|--------------------------------------|----------------------------------|
| | DSF Loading Rate (lb/cap/yr) | Discharging TS-II Equivalent | TS-II WITH Subsurface Soil Dispersal | Connection to major NPDES System |
| | | Remedy System Loading Rate (lb/cap/year) | | |
| | | 1.8 | 0 | 0* |
| Types of DSFs | | Credit Rate | | |
| Single-pass w/ regular discharges | 1.8 | 0 | 1.8 | 1.8 |
| Single-pass w/ no or infrequent discharges | 0.9 | (-0.9) | 0.9 | 0.9 |
| Recirculating filters and other advanced discharging systems | 1.8 | 0 | 1.8 | 1.8 |
| Malfunctioning discharging systems | 1.8 | 0 | 1.8 | 1.8 |