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Pimpneymouse Farm Nitrogen Load Calculations March 29, 2024

Total Perimeter Land Area = 208.9 acres
MVC WQMP Adjusted Nitrogen Load Limit (Pocha Pond) = 6.31 kgN/ac/yr
(A portion of the 208.9 acres is within the Cape Poge watershed which has an adjusted nitrogen load limit of 55.76 kgN/ac/yr – did not use this)
**MVC WQMP Maximum Nitrogen Load for 208.9 acres =
1,318 kg/N/yr**

7 Residential Lots (5 built on, 2 vacant)

Standard Title V Nitrogen Contribution =
185.5 gal/day x 365 days = 67,700 gal/year
67,700 gal/year x 90% leach rate x 3.785 lit/gal x 26.25 mg/l N/1,000,000 =
6.05 kg/yr/dwelling
7 Residential Lots x 2 dwellings per lot = 14 dwellings maximum potentially
14 dwellings x 6.05 kg/yr/dwelling = **84.7 kg N/yr**

Impervious Surfaces (roofs, patios, covered porches)

3,000 sf / lot x 7 = 21,000 sf
MVC WQMP Formula:
21,000 sf x 46.9 inches annual precip / 12 inches per foot x
90% leaching rate x 28.3 liters/cu ft x 0.38 mg/liter N / 1,000,000 =
0.79 kg N/yr

Pervious Surfaces (driveways, dirt roads, etc.)

20,000 sf subdivision dirt road / 2,000 sf per lot x 7 = 34,000 sf
34,000 sf x 46.9 inches annual precip x 12 inches per foot x
65% leaching rate x 28.3 liters/cu ft x 0.75 mg/liter N / 1,000,000 =
1.83 kg N/yr

Maintained lawn / shrubs

7 lots x 4,000 sf / lot = 28,000 sf
28,000 sf x 3 lbs N per 1,000 sf x 20% leaching rate / 2.205 lb/kg =
7.62 kg N/yr

**Max. Total Nitrogen Load Calculation from Pimpneymouse Farm =
84.7 + 0.79 + 1.83 + 7.62 = 94.94 kg N/yr
MVC WQMP Maximum Nitrogen Load for PMF = 1,318 kg N/yr**

