

Nitrogen Loading Summary

October 27, 2023

Martha's Vineyard Commission
P.O. Box 1447
Oak Bluffs, MA 02557

RE: The Priscilla P. Fischer 1994 Trust - "Flat Point Farm", #126 Road to Great Neck, West Tisbury,
Asr. Pcl. 35-3-1 et al., VLSE Job #1476

Dear Board Members,

Our office has evaluated the nitrogen loading of the proposed development currently before your board.

The project locus is ± 109.46 AC which consists of six existing lots with 7 existing dwellings. We are proposing to divide and reconfigure the collective parcels for a total of 13 residential lots and two agricultural restriction parcels. The proposed lots are in the Tisbury Great Pond Watershed and will be subject to the MV Commission's Wastewater Policy that limits nitrogen/wastewater production.

The three main categories of project control outlined in the Commission's policy are wastewater, stormwater runoff from permeable and impermeable surfaces and landscaping. We utilized a set of assumptions for each of these categories to tabulate the proposed nitrogen output of the project and determine a baseline loading rate for the project on a lot-by-lot basis. The assumptions utilized are shown in Table A with the resulting nitrogen production/analysis in Table B

Our calculations result in an allowable nitrogen load of 108.37 Kg/yr and a proposed production of 88.35 Kg/yr. Our approach demonstrates that the project as proposed will have a total nitrogen contribution below the threshold as outlined in the MV Commission's Wastewater Policy. We hope that this document will be helpful to the Commission when reviewing this project.

Sincerely,



Reid G. Silva, PE PLS

TABLE A

LOT ID	AREA AC	AREA SF	BEDROOM EXISTING	BEDROOM PROPOSED (EST)	ROOF EXISTING	ROOF PROPOSED (EST)	DRIVEWAY EXISTING (EST)	DRIVEWAY PROPOSED (EST) GRAVEL	FERTILIZED LAWN AND GARDEN EXISTING (EST)	FERTILIZED LAWN AND GARDEN PROPOSED (EST)
LOT A "Farm House"	4.34	189050	5	1	1457	0	3000	0	0	0
LOT B "Barn & Outbuildings"	6.36	277042	3	5	6701	1000	6150	0	0	0
LOT C "Ira's"	3	130680	3	3	1079	0	3000	0	0	0
LOT D "Larry's"	3.16	137650	2	4	822	0	3000	0	0	0
LOT E "Oyster Shack"	6.1	265716	0	8	555	2500	2000	0	0	0
LOT 4A "Neubert"	3.39	147668	3	3	787	0	3000	0	0	0
LOT 4B	3.12	135907	0	6	0	1750	0	3000	0	0
LOT 5A "Arnold Fischer"	3.41	148540	6	0	3355	0	3150	0	0	0
LOT 5B	3.11	135472	0	6	0	1750	0	3000	0	0
LOT 6A	3.41	148540	0	6	0	1750	0	3000	0	0
LOT 6B	3.15	137214	0	6	0	1750	0	3000	0	0
LOT 7A "Mary Fischer Shack"	3.4	148104	0	6	0	1750	0	3000	0	0
LOT 7B	3.11	135472	0	6	0	1750	0	3000	0	0
AGRICULTURAL PRESERVATION RESTRICTION	25.5	1110780	0	0	0	0	0	0	0	0
AGRICULTURAL PRESERVATION PARCEL (34.9 AC)		0		0	0	0	0	0	0	0
Hay Production	21.14	920858	0	0	0	0	0	0	0	0
Wooded Area (remainder)	13.76	599386	0	0	0	0	0	0	0	0
SUBTOTALS	109.46	4768078	22	60	14756	14000	23300	18000	0	0
			TOTAL BEDROOMS		TOTAL ROOF		TOTAL DRIVEWAY		TOTAL LANDSCAPE	
			82		28756		41300		0	
ROADS							46200			
							TOTAL HARDENED			
							87500			

TABLE B

PROJECT TOTALS

Total Lot Size (acre)	109.46	
Watershed Load Limit Factor (kg/acre/yr)	0.99	TISBURY GREAT POND
Total N Load Limit per area of property (kg)	108.37	

IMPERVIOUS SURFACES (1)	SF	N (kg/proposed sf/yr)	Total Contribution Percentage
Paved Surfaces to Swale	0	0.0000	0.0000%
Paved Surfaces to Drywell	0	0.0000	0.0000%
Gravel, RAP or Hardener Surfaces to Swale	87,500	4.7203	5.5516%
Gravel, RAP or Hardener Surfaces to Drywell	0	0.0000	0.0000%
Roof Surfaces to Swale	28,756	1.0883	1.2799%
Roof Surfaces to Drywell	0	0.0000	0.0000%

LANDSCAPE AREAS	SF	N (kg/acre/yr)	
Formally Landscaped Areas	0	0.0000	0.0000%
Farming - Agriculture - Grazing (Ag. Preservation Lot")	1,110,780	0.0000	0.0000%
Farming - Agriculture - Hay/Grazing (North Field)	920,858	0.0000	0.0000%
Open Space - North field remainder	599,386	0.0000	0.0000%
Market Garden	20,000	0.0000	0.0000%

NOTE: per section 3.5.B an agricultural management plan is being submitted

WASTEWATER USE	SF or Each	N (kg/sf/yr) or N(kg/BR/yr)	
	INPUT # SF or # BR		
Bedrooms (existing - various systems)	22	26.6366	31.3274%
Bedrooms (proposed to use 19mg. I/A)	60	52.5814	61.8411%

Proposed Project Total N (kg/acre/yr)	85.0266	100.0000%
Proposed Project Total N (kg/acre/yr) as percentage of maximum allowable		78.4629%