

125 Airstrip Lane
P. O. Box 539
Ophelia VA 22530
August 2, 2004

Russ Perkinson
DCR, Div. Soil and Water Conservation
203 Governor St., Suite 206
Richmond VA 23219

Dear Russ,

I am getting the sense in the Nutrient Management Committee that the battle is being fought over continuing to use fields as landfills for excess animal waste. In fact, that is a very minor part of the battle to reduce (by 40%!) nutrient loads to Chesapeake Bay. In this regard, I quote from USGS Water-Resources Investigations Report 98-4059 (which I will bring to the next meeting.)

“It is estimated that of the 50 billion gallons of water that reaches the Chesapeake Bay each day, nearly 27 billion gallons is base flow. (p. 1)” Base flow is the discharge of groundwater directly to tidal or non-tidal waterways or streams and does not include overland runoff.

“...management practices designed to reduce nutrient loads.....will have to consider ways to reduce infiltration and recharge to aquifers as well as reducing overland runoff. It also means that high-nitrate ground water in the aquifer will be a long-term reservoir of delayed discharge of nitrogen. This delayed discharge of ground-water nitrogen will need to be accounted for when assessing the effectiveness of any nutrient management strategy. (p. 27)”
FYI a retired hydrogeologist and I estimate that groundwater flow rates here in Northumberland County are on the order of 10m/year.

I request that someone formally and quantitatively address crop yield response to fertilization. A curve was previously provided to us in the document “Part 402 – Nutrient Management” from NRCS. Specifically, I request that the axes of the curve be to the same scale, with “pounds/acre applied” on the abscissa and “pounds removed by the crop” on the ordinate. I would like to know where on the curve most modern agriculture is practiced in the watershed, irrespective of the form of fertilizer, as can best be certified by DCR and/or USDA.

Yours sincerely,

Dr. Lynton S. Land