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The New York Nitrate Leaching Index

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Cover crops are recommended especially when manure is applied in the fall.

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Introduction

The Nitrate Leaching Index (LI) is an indicator of the potential for nitrate to reach groundwater. Nitrate, because it is water soluble, moves downward as water percolates through the soil. The extent of percolation depends on permeability, pore-size distribution, soil depth to a restrictive layer, artificial drainage, and precipitation amount and distribution over the year. For a given precipitation pattern, excessively well drained soils such as Howard, Adams, Hoosic and Tunkhannock, or even well drained soils such as Madrid, Palmyra, Honeoye and Ontario have a significantly greater leaching potential than less well drained soils such as Vergennes, Swanton, Rhinebeck, Lordstown or Volusia. The current LI rates leaching potential based on soil hydrologic group (Table 1) and 10 year average precipitation data from weather stations around NY. Until recently, rainfall data were county-based. The latest version of the LI uses township-based precipitation data, which more accurately reflects precipitation patterns than the previously used county-based data. The effect of township-based data on LI score varies: some areas have significantly higher scores, some significantly lower, while other areas are essentially unchanged.

Table 1: Soil hydrologic groups. See Appendix A for a complete list of hydrologic groups for New York soils.

Soil hydrologic group	Type	Infiltration capacity/permeability	Leaching potential	Runoff potential
A	Deep, well-drained sands and gravels.	High	High	Low
B	Moderately drained, moderately fine to moderately coarse texture.	Moderate	Moderate	Moderate
C	Impeding layer, or moderately fine to fine texture.	Low	Low	High
D	Clay soils, soils with high water table.	Very low	Very low	Very high

How to calculate?

The Nitrate Leaching Index is the product of the Percolation Index and the Seasonal Index (Williams and Kissel, 1991): **LI = Percolation Index * Seasonal Index**. The Percolation Index (PI) is a function of the annual average precipitation (P_A) and soil hydrologic group. The hydrologic group for each New York soil series can be found in Appendix A. Under identical precipitation levels, soils with a hydrologic group “A” have the greatest percolation potential while soils of hydrologic group “D” have the least percolation and therefore are least conducive to leaching. Equations are shown below for users who wish to build these into their own software applications:

$$\text{Hydrologic Group A: } PI = (P_A - 10.28)^2 / (P_A + 15.43)$$

$$\text{Hydrologic Group B: } PI = (P_A - 15.05)^2 / (P_A + 22.57)$$

$$\text{Hydrologic Group C: } PI = (P_A - 19.53)^2 / (P_A + 29.29)$$

$$\text{Hydrologic Group D: } PI = (P_A - 22.67)^2 / (P_A + 34.00)$$

These equations were derived from Williams and Kissel (1991) and reported by Pierce et al. (1991 -

Box 1: What is the leaching index for a corn field near Auburn NY that is classified as a Lima soil type?

- Step 1:
Task: Look up the hydrologic group in Appendix A.
Answer: Lima has a hydrologic group B.
- Step 2:
Task: Look up the annual precipitation (P_A) for Auburn in Cayuga County (Appendix B).
Answer: $P_A = 36.4$ inches.
- Step 3:
Task: Look up the formula for the Percolation Index (PI) for a hydrologic group B soil.
Answer: $PI = (P_A - 15.05)^2 / (P_A + 22.57)$
- Step 4:
Task: Calculate the PI.
Answer: $PI = (36.4 - 15.05)^2 / (36.4 + 22.57) = 7.73$.
- Step 5:
Task: Look up the winter precipitation (P_W) for Auburn.
Answer: $P_W = 16.0$ inches.
- Step 6:
Task: Calculate the seasonal index (SI).
Answer: $SI = (2 * P_W / P_A)^{1/3} = (2 * 16.0 / 36.4)^{1/3} = 0.96$
- Step 7:
Task: Multiply the PI and the SI to obtain the LI.
Answer: $LI = PI * SI = 7.73 * 0.96 = 7.4$.

Table 12-1). Precipitation data can be found in Appendix B. For soils with a hydrologic group that consists of more than one letter (e.g. “A/D”, “A/C”, “C/D”), its hydrologic group is determined by the presence or absence of adequate artificial drainage. If the field is artificially drained (“adequate” or “excellent”) the hydrologic group moves to the first of the two classes. If the field is inadequately drained or not drained at all, (“none” or “inadequate”), the second of the two classes is assigned. For example, a Halcott soil has a hydrologic class of “C/D”. If this soil has adequate or excellent artificial drainage, the hydrologic group used is “C”. If the soil is not or inadequately artificially drained, the hydrologic group “D” is assigned. For soils with a single hydrologic group, artificial drainage does not influence the hydrologic group used.

The Seasonal Index (SI) is determined by the annual precipitation (P_A in inches) and the sum of the fall and winter precipitation (P_W , from October through March in inches): $SI = (2 * P_W / P_A)^{1/3}$. Average township-based precipitation as well as the N Leaching Index values for soils with hydrologic groups A, B, C, or D can be found in Appendix B. An example of an N Leaching Index calculation is given in Box 1. Fortunately, no calculations are necessary: LI scores for each hydrologic group in each NY township are reported in Appendix B. Use Appendix A to identify soil hydrologic group and Appendix B to look up LI scores.

Management Implications

An LI below 2 indicates that the potential for nitrate leaching below the root zone is low. An LI greater than 10 inches indicates that the potential for soluble nutrient leaching below the root zone is large while LI's between 2 and 10 are considered intermediate. In order to meet the N leaching requirements of the NRCS nutrient management standard (590), producers are expected to *implement* best management practices if the LI score for a field is high (>10). Producers are expected to *consider* the same practices on a case-by-case basis if the LI score for a field is intermediate (2-10). Best management practices recommended for soils with medium to high N leaching indices include those listed below. These recommendations are based on research done, among others, by Sogbedji and coworkers (2000) and Van Es and coworkers (2002).

- Unless the New York Phosphorus Index identifies the need for P based fertility management, manure and fertilizer application rates should be based on Cornell guidelines for meeting crop N needs.
- For corn, pre-plant (other than starter fertilizer) and early post plant *broadcast* applications of commercial nitrogen without the use of nitrification inhibitors are not recommended.
- Sidedress applications should be made after the corn has at least four true leaves.
- If starter N must be broadcast (e.g., for small grains or new seedings of grass), apply fertilizer as close to expected planting date as possible (ideally within 3 days or less).
- For row and cereal crops, including corn, maintain starter fertilizer N rates below 50 lbs/acre actual N under normal conditions.
- Manure and fertilizer applications should be adjusted based on information provided in “Nitrogen Recommendations for Field Crops in New York”, Cornell University Department of Crop and Soil Sciences Extension Series E01-4 (Ketterings and coworkers, 2001).
- Evaluate the need for sidedress N applications based on PSNT or other soil nitrate-nitrogen tests.
- Sod crops should not be incorporated in the fall. Chemical sod killing may be carried out when the soil temperature at four-inch depth is approaching 45°F. Depending on location, this will not likely take place until early October.
- Minimize fall and/or winter manure application on good grass and/or legume sod fields that are to be rotated the following spring.
- Appropriate ammonia conservation is encouraged. Losses can either be reduced by immediately incorporating manure or eliminated by directly injecting manure as a sidedress application to growing crops.
- Plant winter hardy cover crops whenever possible, regardless of, but especially when fall manure is applied (e.g., rye, winter wheat, or interseed ryegrass in summer).

- Manure may be applied in the fall where there is a growing crop. Judicious amounts of manure can be applied to or in conjunction with perennial crops or winter hardy cover crops. Applications should generally not exceed the greater of 50 lbs/acre of first year available N or 50% of the expected N requirement of next year's crop.
- Frost incorporation/injection is acceptable when soil conditions are suitable but winter applications should be made in accordance with the New York Phosphorus Index.
- Manure N application on legumes is acceptable to satisfy agronomic requirements when legumes represent less than 50% of the stand. When legumes represent more than 50% of the stand, manure may be applied at a rate not exceeding 150 lbs of available N/acre.

References

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Appendix A: Soil Hydrologic Group - 4/13/2003.

Appendix A: Soil hydrologic groups (HG) for New York soil types. For soils with a hydrologic group that consists of more than one letter (e.g. "A/D", "A/C", "C/D"), the hydrologic group for the N Leaching Index is determined by the presence or absence of adequate artificial drainage. If the field is artificially drained the hydrologic group moves to the first of the two classes. If the field is inadequately drained or not drained at all, the second of the two classes is assigned.

Soil Type	HG
Acton	C
Adams	A
Adirondack	D
Adjidaumo	D
Adrian	A/D
Agawam	B
Albia	C
Albrights	C
Alden	D
Allagash	B
Allard	B
Allendale	D
Allis	D
Alluvial Land	C
Almond	C
Alps	C
Altmar	B
Alton	A
Amboy	C
Amenia	B
Angola	C
Appleton	C
Arkport	B
Armagh	D
Arnot	C/D
Ashville	D
Atherton	B
Atkins	D
Atsion	C
Au Gres	B
Aurelie	D
Aurora	C
Barbour	B
Barcelona	C
Barre	D
Bash	C
Basher	B

Soil Type	HG
Bath	C
Becket	C
Becraft	B
Belgrade	B
Benson	D
Berkshire	B
Bernardston	C
Berrien	C
Berryland	B
Beseman	A
Bice	B
Biddeford	D
Birdsall	D
Blasdell	A
Bombay	B
Bonaparte	A
Bono	D
Boots	A
Borosapristis	A/D
Boynton	D
Braceville	C
Brayton	C
Bridgehampton	B
Bridport	D
Briggs	A
Brinkerton	D
Broadalbin	C
Brockport	D
Brookfield	B
Buckland	C
Bucksport	D
Budd	B
Burdett	C
Burnham	D
Busti	C
Buxton	C
Cambria	D

Soil Type	HG
Cambridge	C
Camillus	B
Camroden	C
Canaan	C
Canaan-Rock Outcrop	C
Canadice	D
Canandaigua	D
Canaseraga	C
Canastota	C
Caneadea	D
Canfield	C
Canton	B
Carbondale	A
Carlisle	A/D
Carrollton	C
Carver	A
Carver-Plymouth	A
Castile	B
Cathro	A
Cathro-Greenwood	A
Cattaraugus	C
Cavode	C
Cayuga	C
Cazenovia	B
Ceresco	Na
Chadakoin	B
Chagrin	B
Champlain	A
Charles	C
Charlton	B
Chatfield	B
Chaumont	D
Chautauqua	C
Cheektowaga	D
Chenango	A
Cheshire	B

Appendix A: Soil Hydrologic Group - 4/13/2003.

Soil Type	HG
Chippeny	D
Chippewa	D
Churchville	D
Cicero	C
Clarkson	B
Claverack	C
Clymer	B
Cohoctah	B
Collamer	C
Colonie	A
Colosse	A
Colrain	A
Colton	A
Colwood	D
Conesus	B
Conotton	A
Constable	A
Cook	D
Copake	B
Cornish	C
Cosad	C
Cossayuna	C
Covert	A
Coveytown	C
Covington	D
Crary	C
Croghan	B
Culvers	C
Dalbo	C
Dalton	C
Danley	C
Dannemora	D
Darien	C
Dawson	A
Deerfield	B
Deford	A
Dekalb	A
Depeyster	C
Deposit	B
Derb	C
Dixmont	C
Dorval	A

Soil Type	HG
Dover	B
Duane	B
Dunkirk	B
Dutchess	B
Duxbury	A
Edwards	B
Eel	B
Eelweir	C
Elka	C
Ellery	D
Elmridge	C
Elmwood	C
Elnora	B
Empeyville	C
Enfield	B
Ensley	B
Erie	C
Ernest	C
Essex	C
Fahey	B
Farmington	C
Farnham	C
Fernlake	A
Flackville	C
Fonda	D
Franklinville	B
Fredon	C
Freetown	D
Fremont	C
Frenchtown	D
Frewsburg	C
Fryeburg	B
Fulton	D
Gage	D
Galen	B
Galestown	A
Galoo	C
Galoo-Rock Outcrop	C
Galway	B
Genesee	B
Georgia	C

Soil Type	HG
Getzville	D
Gilpen	C
Gilpin	C
Glebe	C
Glebe-Saddleback	C
Glendora	A/D
Glenfield	B
Gloucester	A
Glover	D
Gougeville	A
Granby	A/D
Grattan	A
Greene	C
Greenwood	A
Grenville	B
Gretor	C
Groton	A
Groveton	A
Guff	D
Guffin	D
Gulf	B
Hadley	B
Haight	B
Haight-Gulf	B
Hailesboro	C
Halcott	C/D
Halsey	C/D
Hamlin	B
Hamplain	B
Hannawa	D
Hartland	B
Haven	B
Hawksnest	C/D
Hempstead	B
Henrietta	B
Herkimer	B
Hermon	A
Hero	B
Heuvelton	C
Hilton	B
Hinckley	A
Hinesburg	C

Appendix A: Soil Hydrologic Group - 4/13/2003.

Soil Type	HG
Hogansburg	B
Hogback	C
Hogback-Ricker	C
Holderton	B
Hollis	C
Holly	C/D
Holyoke	C
Holyoke-Rock Outcr	C
Homer	B
Honeoye	B
Hoosic	A
Hornell	D
Hornellsville	D
Houghtonville	C
Houghtonville- Rawson	C
Houseville	C
Howard	A
Hudson	C
Hulberton	C
Ilion	D
Insula	B
Ipswich	D
Ira	C
Ischua	B
Ivory	C
Jebavy	A
Joliet	D
Junius	C
Kalurah	B
Kanona	D
Kars	A
Kearsarge	B
Kendaia	C
Kibbie	B
Kingsbury	D
Kinzua	B
Knickerbocker	A
Lackawanna	C
Lagross	A
Lagross-Hights	A

Soil Type	HG
Lairdsville	D
Lakemont	D
Lakewood	A
Lamson	B/D
Lanesboro	C
Langford	C
Lansing	B
Leck Kill	B
Leicester	C
Leon	C
Lewbath	C
Lewbeach	C
Leyden	C
Lima	B
Limerick	C
Linden	B
Linlithgo	B
Livingston	D
Lobdell	B
Lockport	D
Lorain	D
Lordstown	C
Lovewell	B
Lowville	B
Loxley	A
Lucas	C
Ludlow	C
Lupton	A
Lyman	C
Lyman-Becket- Berkshire	C
Lyme	C
Lyons	D
Machias	B
Macomber	C
Macomber-Taconic	C
Madalin	D
Madawaska	B
Madrid	B
Malone	C
Manahawkin	D
Mandy	C

Soil Type	HG
Manheim	C
Manhoning	D
Manlius	C
Mansfield	D
Maplecrest	B
Marcy	D
Mardin	C
Marilla	C
Markey	A/D
Marlow	C
Martisco	B
Massena	C
Matoon	D
Matunuck	D
Medihemists	A/D
Medina	B
Medomak	D
Melrose	C
Menlo	D
Mentor	B
Merrimac	A
Middlebrook	C
Middlebrook- Mongaup	C
Middlebury	B
Millis	C
Millsite	C
Mineola	A
Miner	D
Mino	C
Minoa	C
Mohawk	B
Moira	C
Monadnock	B
Monarda	D
Mongaup	C
Montauk	C
Mooers	B
Morocco	C
Morris	C
Mosherville	C
Muck	D

Appendix A: Soil Hydrologic Group - 4/13/2003.

Soil Type	HG
Muck-Peat	D
Mundal	C
Mundalite	C
Mundalite-Rawsonvill	C
Munson	D
Munuscong	B
Muskego	A/C
Muskellunge	D
Napoleon	A
Napoli	C
Nassau	C
Naumburg	C
Nehasne	B
Nellis	B
Neversink	D
Newfane	B
Newstead	C
Newton	A/D
Niagara	C
Nicholville	C
Ninigret	B
Norchip	D
Norwell	C
Norwich	D
Nunda	C
Oakville	A
Occum	B
Odessa	D
Ogdensburg	C
Olean	B
Ondawa	B
Oneida	C
Onoville	C
Ontario	B
Onteora	C
Ontusia	C
Oquaga	C
Oramel	C
Organic	A/D
Orpark	C
Orwell	D

Soil Type	HG
Ossipee	D
Otego	B
Otisville	A
Ottawa	A
Ovid	C
Palatine	B
Palms	A/D
Palmyra	B
Panton	D
Papakating	D
Parishville	C
Parsippany	D
Patchin	D
Pawcatuck	D
Pawling	B
Paxton	C
Peacham	D
Peat	A/D
Peat-Muck	A/D
Peru	C
Petoskey	A
Phelps	B
Philo	B
Pillsbury	C
Pinckney	C
Pipestone	B
Pittsfield	B
Pittstown	C
Plainbo	A
Plainfield	A
Plessis	D
Plymouth	A
Podunk	B
Poland	B
Pompton	B
Pootatuck	B
Pope	B
Potsdam	C
Poygan	D
Punsit	C
Pyrities	B
Quetico	D

Soil Type	HG
Quetico-Rock	
Outcro	D
Raquette	B
Rawsonville	C
Rawsonville-Beseman-	C
Rayne	B
Raynham	C
Raypol	C
Red Hook	C
Redwater	B
Remsen	D
Retsof	C
Rexford	C
Rhinebeck	D
Ricker	A
Ricker-Lyman	A
Ridgebury	C
Rifle	A
Riga	D
Rippowam	C
Riverhead	B
Rockaway	C
Romulus	D
Ross	B
Roundabout	C
Rumney	C
Runeberg	C
Ruse	D
Rushford	B
Saco	D
Salamanca	B
Salmon	B
Saprists	A/D
Saugatuck	C
Scantic	D
Scarboro	D
Schoharie	C
Schroon	B
Schuyler	B
Scio	B
Scituate	B

Appendix A: Soil Hydrologic Group - 4/13/2003.

Soil Type	HG
Scriba	C
Searsport	D
Shaker	C
Shoreham	D
Sisk	C
Skerry	C
Sloan	B
Sodus	C
Somerset	C
St Johns	D
Staatsburg	C
Stafford	C
Steamburg	B
Stetson	B
Stissing	C
Stockbridge	C
Stockholm	C
Stowe	B
Sudbury	B
Suffield	B
Summerville	D
Sun	D
Sunapee	B
Suncook	A
Suny	D
Surplus	C
Surplus-Sisk	C
Sutton	B
Swanton	C
Swartswood	C
Swormville	C
Taconic	C
Taconic-Macomber	C
Tawas	A
Teel	B
Tioga	B
Toledo	D
Tonawanda	D
Tor	D

Soil Type	HG
Torull	D
Towerville	B
Trestle	B
Trout River	A
Troy	C
Trumbull	D
Tughill	D
Tuller	D
Tunbridge	C
Tunbridge-Adirondack	C
Tunkhannock	A
Turin	C
Tuscarora	C
Unadilla	B
Valois	B
Varick	D
Varysburg	B
Venango	C
Vergennes	C
Vly	C
Volusia	C
Waddington	A
Wainola	B
Wakeland	C
Wakeville	B
Wallace	B
Wallington	C
Wallkill	C
Walpole	C
Walton	C
Wampsville	B
Wappinger	B
Wareham	C
Warners	C
Wassaic	B
Watchaug	B
Waumbeck	B
Wayland	C/D

Soil Type	HG
Weaver	C
Wegatchie	D
Wellsboro	C
Wenonah	C
Westbury	B
Westland	C
Wethersfield	C
Wharton	C
Whately	D
Whippany	C
Whitelaw	B
Whitman	D
Wilbraham	C
Willdin	C
Willette	A
Williamson	C
Willowemoc	C
Wilmington	D
Wilpoint	D
Windsor	A
Winooski	B
Wolcottsburg	D
Wonsqueak	D
Woodbridge	C
Woodlawn	B
Woodstock	D
Woodstock-Rock Outcrop	D
Wooster	C
Woostern	C
Woostern-Bath-Valois	C
Worden	C
Worth	C
Wurtsboro	C
Wyalusing	D
Yalesville	C
Yorkshire	C

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

Appendix B: New York township-based nitrate leaching index for soils with hydrological groups A, B, C and D. See appendix A for hydrologic groups for New York soil types and the formula used to calculate the N Leaching Indices for the different soil types.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Albany	Berne	39.4	18.1	15.0	9.3	5.6	3.7
Albany	Bethlehem	36.4	16.0	12.6	7.4	4.1	2.6
Albany	Coeymans	37.7	16.4	13.5	8.1	4.7	3.0
Albany	Colonie	36.8	15.9	12.9	7.6	4.3	2.7
Albany	Guilderland	37.5	16.5	13.4	8.0	4.6	3.0
Albany	Knox	40.6	18.5	15.9	10.0	6.2	4.2
Albany	New Scotland	37.8	16.5	13.6	8.2	4.8	3.1
Albany	Rensselaerville	38.2	17.0	14.0	8.5	5.0	3.2
Albany	Westerlo	39.0	17.4	14.6	9.0	5.3	3.5
Allegany	Alfred	37.0	16.3	13.1	7.8	4.4	2.8
Allegany	Allen	36.9	15.3	12.7	7.5	4.3	2.7
Allegany	Alma	38.8	16.5	14.2	8.7	5.2	3.4
Allegany	Almond	35.3	14.5	11.6	6.6	3.6	2.2
Allegany	Amity	35.5	14.3	11.6	6.7	3.7	2.2
Allegany	Andover	37.4	16.4	13.3	8.0	4.6	2.9
Allegany	Angelica	36.0	14.8	12.1	7.0	3.9	2.4
Allegany	Belfast	35.7	14.5	11.8	6.8	3.8	2.3
Allegany	Birdsall	36.9	15.6	12.8	7.6	4.3	2.7
Allegany	Bolivar	38.9	16.4	14.3	8.8	5.2	3.4
Allegany	Burns	34.2	13.8	10.7	6.0	3.2	1.8
Allegany	Caneadea	35.0	14.8	11.5	6.6	3.5	2.1
Allegany	Centerville	38.4	15.9	13.8	8.4	4.9	3.2
Allegany	Clarksville	39.0	16.5	14.3	8.8	5.3	3.5
Allegany	Cuba	38.4	16.2	13.9	8.5	5.0	3.2
Allegany	Friendship	36.9	15.1	12.7	7.5	4.3	2.7
Allegany	Genesee	39.0	16.5	14.3	8.8	5.2	3.5
Allegany	Granger	36.7	15.5	12.6	7.5	4.2	2.6
Allegany	Grove	36.4	15.3	12.4	7.3	4.1	2.5
Allegany	Hume	35.5	14.8	11.7	6.8	3.7	2.2
Allegany	Independence	37.0	15.6	12.9	7.7	4.4	2.7
Allegany	New Hudson	37.8	15.4	13.3	8.0	4.6	3.0
Allegany	Rushford	36.4	15.0	12.4	7.3	4.1	2.5
Allegany	Scio	36.9	15.1	12.7	7.5	4.3	2.7
Allegany	Ward	37.3	16.3	13.2	7.9	4.5	2.9
Allegany	Wellsville	36.2	14.8	12.2	7.1	4.0	2.4

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Allegheny	West Almond	37.2	16.2	13.1	7.8	4.5	2.8
Allegheny	Willing	36.7	15.2	12.6	7.4	4.2	2.6
Allegheny	Wirt	38.9	16.5	14.2	8.7	5.2	3.4
Broome	Barker	37.0	16.1	13.0	7.7	4.4	2.7
Broome	Binghamton	38.8	17.5	14.5	8.9	5.3	3.4
Broome	Chenango	37.0	16.0	13.0	7.7	4.4	2.8
Broome	Colesville	40.0	18.0	15.4	9.6	5.9	3.9
Broome	Conklin	38.4	16.7	14.0	8.5	5.0	3.3
Broome	Dickinson	36.7	16.0	12.8	7.5	4.3	2.6
Broome	Fenton	37.8	16.6	13.6	8.2	4.8	3.1
Broome	Kirkwood	38.3	16.6	13.9	8.4	5.0	3.2
Broome	Lisle	37.2	16.6	13.3	7.9	4.5	2.9
Broome	Maine	36.3	16.0	12.5	7.3	4.1	2.5
Broome	Nanticoke	37.0	16.1	13.0	7.7	4.4	2.8
Broome	Sanford	44.2	20.5	18.8	12.4	8.1	5.8
Broome	Triangle	37.5	16.6	13.4	8.0	4.6	2.9
Broome	Union	35.4	15.9	12.0	6.9	3.8	2.3
Broome	Vestal	37.0	16.2	13.1	7.8	4.4	2.8
Broome	Windsor	40.9	18.6	16.1	10.2	6.3	4.3
Cattaraugus	Allegheny	42.8	18.5	17.3	11.2	7.1	5.0
Cattaraugus	Ashford	43.6	19.8	18.2	11.9	7.7	5.5
Cattaraugus	Carrollton	43.0	18.6	17.5	11.4	7.3	5.1
Cattaraugus	Cold Spring	44.2	19.8	18.6	12.3	8.0	5.7
Cattaraugus	Conewango	43.5	19.7	18.1	11.9	7.6	5.4
Cattaraugus	Dayton	42.9	19.8	17.7	11.5	7.4	5.2
Cattaraugus	East Otto	43.9	20.1	18.5	12.2	7.9	5.6
Cattaraugus	Ellicottville	46.3	21.2	20.4	13.8	9.2	6.7
Cattaraugus	Farmersville	40.6	17.5	15.6	9.8	6.0	4.1
Cattaraugus	Franklinville	42.6	18.7	17.2	11.1	7.1	5.0
Cattaraugus	Freedom	42.0	18.3	16.7	10.7	6.7	4.7
Cattaraugus	Great Valley	45.1	20.2	19.3	12.9	8.5	6.1
Cattaraugus	Hinsdale	40.5	17.4	15.5	9.8	6.0	4.0
Cattaraugus	Humphrey	43.6	19.1	18.0	11.8	7.6	5.4
Cattaraugus	Ischua	41.0	17.7	15.9	10.1	6.3	4.3
Cattaraugus	Leon	43.6	19.8	18.2	11.9	7.7	5.4
Cattaraugus	Little Valley	48.5	22.9	22.4	15.4	10.6	7.9
Cattaraugus	Lyndon	40.1	17.5	15.3	9.6	5.9	3.9
Cattaraugus	Machias	42.9	18.8	17.5	11.3	7.2	5.1
Cattaraugus	Mansfield	47.1	22.0	21.2	14.4	9.8	7.2

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Cattaraugus	Napoli	47.3	22.0	21.3	14.5	9.8	7.3
Cattaraugus	New Albion	45.7	20.8	19.9	13.4	8.9	6.5
Cattaraugus	Olean	40.8	17.4	15.7	9.9	6.1	4.2
Cattaraugus	Otto	43.0	19.4	17.7	11.5	7.3	5.2
Cattaraugus	Perrysburg	40.1	18.3	15.5	9.7	5.9	4.0
Cattaraugus	Persia	42.3	19.2	17.2	11.1	7.0	4.9
Cattaraugus	Portville	39.6	16.9	14.8	9.2	5.6	3.7
Cattaraugus	Randolph	44.4	20.4	18.9	12.5	8.2	5.9
Cattaraugus	Red House	45.0	20.2	19.2	12.8	8.4	6.1
Cattaraugus	Salamanca	44.7	20.2	19.0	12.6	8.3	5.9
Cattaraugus	South Valley	44.3	20.1	18.8	12.4	8.1	5.8
Cattaraugus	Yorkshire	42.5	18.9	17.2	11.1	7.1	5.0
Cayuga	Auburn	36.4	16.0	12.6	7.4	4.2	2.6
Cayuga	Aurelius	34.9	15.1	11.4	6.5	3.5	2.1
Cayuga	Brutus	37.0	17.0	13.2	7.9	4.5	2.8
Cayuga	Cato	37.6	17.3	13.7	8.2	4.7	3.0
Cayuga	Conquest	36.8	16.9	13.1	7.8	4.4	2.8
Cayuga	Fleming	36.8	15.9	12.9	7.6	4.3	2.7
Cayuga	Genoa	35.9	14.9	12.0	7.0	3.9	2.3
Cayuga	Ira	39.0	18.0	14.7	9.1	5.4	3.5
Cayuga	Ledyard	34.0	14.3	10.8	6.0	3.1	1.8
Cayuga	Locke	37.9	16.2	13.6	8.2	4.8	3.0
Cayuga	Mentz	35.4	15.9	12.0	6.9	3.8	2.3
Cayuga	Montezuma	35.0	15.3	11.6	6.6	3.6	2.1
Cayuga	Moravia	37.8	15.9	13.5	8.1	4.7	3.0
Cayuga	Niles	38.6	17.3	14.3	8.7	5.2	3.4
Cayuga	Owasco	37.7	17.0	13.6	8.2	4.7	3.0
Cayuga	Scipio	37.0	15.5	12.8	7.6	4.3	2.7
Cayuga	Sempronius	40.1	18.0	15.4	9.6	5.9	3.9
Cayuga	Sennett	37.3	17.0	13.4	8.0	4.6	2.9
Cayuga	Springport	34.4	14.8	11.1	6.2	3.3	1.9
Cayuga	Sterling	39.5	19.5	15.4	9.6	5.8	3.8
Cayuga	Summerhill	40.4	17.9	15.6	9.8	6.0	4.1
Cayuga	Throop	35.0	15.5	11.7	6.7	3.6	2.1
Cayuga	Venice	37.3	15.3	13.0	7.7	4.4	2.8
Cayuga	Victory	37.9	17.2	13.9	8.4	4.9	3.1
Chautauqua	Arkwright	46.2	21.9	20.5	13.8	9.2	6.8
Chautauqua	Busti	45.2	20.8	19.5	13.0	8.6	6.2
Chautauqua	Carroll	44.6	20.3	19.0	12.6	8.2	5.9

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Chautauqua	Charlotte	47.5	22.9	21.7	14.8	10.1	7.5
Chautauqua	Chautauqua	46.8	21.9	21.0	14.2	9.6	7.1
Chautauqua	Cherry Creek	45.9	21.7	20.3	13.6	9.1	6.6
Chautauqua	Clymer	47.2	22.3	21.4	14.5	9.8	7.3
Chautauqua	Dunkirk	39.0	18.3	14.8	9.1	5.4	3.6
Chautauqua	Ellery	46.4	22.1	20.8	14.0	9.4	6.9
Chautauqua	Ellicott	45.5	21.4	19.9	13.3	8.8	6.4
Chautauqua	Ellington	45.9	21.6	20.3	13.6	9.1	6.6
Chautauqua	French Creek	47.1	21.9	21.1	14.4	9.7	7.2
Chautauqua	Gerry	46.8	22.3	21.1	14.3	9.6	7.1
Chautauqua	Hanover	41.3	19.0	16.5	10.5	6.5	4.5
Chautauqua	Harmony	47.0	21.7	21.0	14.3	9.6	7.1
Chautauqua	Kiantone	44.3	20.0	18.7	12.3	8.0	5.8
Chautauqua	Mina	47.0	21.9	21.1	14.3	9.7	7.1
Chautauqua	North Harmony	46.4	21.9	20.7	14.0	9.4	6.9
Chautauqua	Poland	44.2	20.3	18.8	12.4	8.1	5.8
Chautauqua	Pomfret	43.0	19.9	17.9	11.6	7.4	5.2
Chautauqua	Portland	43.2	19.6	17.9	11.7	7.5	5.3
Chautauqua	Ripley	45.6	20.7	19.8	13.2	8.8	6.4
Chautauqua	Sheridan	40.9	18.7	16.2	10.2	6.3	4.3
Chautauqua	Sherman	47.1	22.1	21.2	14.4	9.8	7.2
Chautauqua	Stockton	46.4	22.0	20.7	14.0	9.4	6.9
Chautauqua	Villanova	45.3	21.5	19.8	13.2	8.7	6.3
Chautauqua	Westfield	45.6	20.7	19.8	13.2	8.8	6.4
Chemung	Ashland	34.8	15.0	11.4	6.5	3.5	2.0
Chemung	Baldwin	35.5	15.4	11.9	6.9	3.8	2.3
Chemung	Big Flats	33.1	13.7	10.1	5.5	2.8	1.5
Chemung	Catlin	34.4	14.0	10.9	6.1	3.2	1.9
Chemung	Chemung	35.4	15.6	11.9	6.9	3.8	2.3
Chemung	Elmira	33.5	14.2	10.4	5.8	2.9	1.7
Chemung	Erin	36.4	16.1	12.6	7.4	4.1	2.6
Chemung	Horseheads	33.8	14.1	10.6	5.9	3.0	1.7
Chemung	Southport	34.0	14.4	10.8	6.0	3.1	1.8
Chemung	Van Etten	37.7	16.8	13.6	8.2	4.7	3.0
Chemung	Veteran	34.4	14.6	11.0	6.2	3.3	1.9
Chenango	Afton	40.7	18.1	15.9	10.0	6.2	4.2
Chenango	Bainbridge	40.8	17.5	15.8	10.0	6.2	4.2
Chenango	Columbus	39.0	17.5	14.6	9.0	5.4	3.5
Chenango	Coventry	40.3	17.5	15.4	9.7	5.9	4.0

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Chenango	German	42.3	19.0	17.2	11.1	7.0	4.9
Chenango	Greene	38.8	17.0	14.3	8.8	5.2	3.4
Chenango	Guilford	39.9	17.3	15.1	9.4	5.7	3.8
Chenango	Lincklaen	41.0	18.4	16.1	10.2	6.3	4.3
Chenango	McDonough	41.4	18.4	16.4	10.4	6.5	4.5
Chenango	New Berlin	39.2	17.5	14.7	9.1	5.4	3.6
Chenango	North Norwich	38.1	16.9	13.9	8.4	4.9	3.2
Chenango	Norwich	39.6	17.5	15.0	9.3	5.6	3.7
Chenango	Otselic	41.1	18.1	16.1	10.2	6.3	4.3
Chenango	Oxford	39.4	17.5	14.9	9.2	5.5	3.7
Chenango	Pharsalia	42.8	19.6	17.7	11.5	7.3	5.1
Chenango	Pitcher	41.9	18.6	16.8	10.8	6.8	4.7
Chenango	Plymouth	40.1	17.5	15.3	9.6	5.8	3.9
Chenango	Preston	40.2	17.6	15.4	9.7	5.9	4.0
Chenango	Sherburne	37.7	16.6	13.6	8.2	4.7	3.0
Chenango	Smithville	39.5	17.5	14.9	9.2	5.6	3.7
Chenango	Smyrna	39.3	17.3	14.8	9.1	5.5	3.6
Clinton	Altona	32.9	13.6	9.9	5.4	2.7	1.5
Clinton	Ausable	31.8	13.2	9.2	4.8	2.3	1.2
Clinton	Beekmantown	32.7	13.5	9.8	5.3	2.6	1.4
Clinton	Black Brook	35.8	15.2	12.0	7.0	3.8	2.3
Clinton	Champlain	32.6	13.0	9.6	5.2	2.5	1.4
Clinton	Chazy	32.4	13.0	9.5	5.1	2.5	1.3
Clinton	Clinton	34.9	14.7	11.4	6.5	3.5	2.1
Clinton	Dannemora	37.8	16.6	13.6	8.2	4.8	3.1
Clinton	Ellenburg	36.9	15.9	12.9	7.7	4.4	2.7
Clinton	Mooers	32.1	13.0	9.3	4.9	2.4	1.2
Clinton	Peru	32.2	13.5	9.5	5.1	2.5	1.3
Clinton	Plattsburgh	32.4	13.6	9.6	5.2	2.5	1.3
Clinton	Saranac	36.4	15.5	12.5	7.3	4.1	2.5
Clinton	Schuyler Falls	32.3	13.3	9.6	5.1	2.5	1.3
Columbia	Ancram	43.8	19.7	18.3	12.0	7.8	5.6
Columbia	Austerlitz	46.0	21.2	20.2	13.6	9.0	6.6
Columbia	Canaan	45.3	20.5	19.5	13.0	8.6	6.2
Columbia	Chatham	41.3	18.5	16.4	10.4	6.5	4.5
Columbia	Claverack	41.3	18.5	16.4	10.4	6.5	4.5
Columbia	Clermont	41.4	19.1	16.6	10.6	6.6	4.5
Columbia	Copake	44.4	20.1	18.8	12.5	8.1	5.8
Columbia	Gallatin	42.3	19.0	17.2	11.1	7.0	4.9

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Columbia	Germantown	41.0	18.8	16.2	10.3	6.4	4.4
Columbia	Ghent	41.0	18.4	16.1	10.2	6.3	4.3
Columbia	Greenport	39.5	17.5	14.9	9.2	5.6	3.7
Columbia	Hillsdale	45.2	20.8	19.6	13.1	8.6	6.3
Columbia	Kinderhook	39.2	17.5	14.7	9.1	5.4	3.6
Columbia	Livingston	41.0	18.5	16.2	10.2	6.3	4.3
Columbia	New Lebanon	42.3	18.9	17.1	11.0	7.0	4.9
Columbia	Stockport	39.0	17.5	14.6	9.0	5.4	3.5
Columbia	Stuyvesant	38.4	17.0	14.1	8.6	5.1	3.3
Columbia	Taghkanic	42.4	19.0	17.2	11.1	7.0	4.9
Cortland	Cincinnatus	42.1	18.8	16.9	10.9	6.9	4.8
Cortland	Cortlandville	39.5	18.5	15.2	9.4	5.7	3.8
Cortland	Cuyler	41.1	18.3	16.1	10.2	6.3	4.3
Cortland	Freetown	41.2	18.0	16.2	10.3	6.4	4.4
Cortland	Harford	39.0	17.4	14.6	9.0	5.3	3.5
Cortland	Homer	40.7	18.8	16.0	10.1	6.2	4.2
Cortland	Lapeer	39.0	17.5	14.6	9.0	5.4	3.5
Cortland	Marathon	39.1	17.3	14.7	9.0	5.4	3.6
Cortland	Preble	40.9	18.6	16.1	10.2	6.3	4.3
Cortland	Scott	41.0	18.8	16.3	10.3	6.4	4.4
Cortland	Solon	41.3	18.8	16.5	10.5	6.5	4.5
Cortland	Taylor	42.1	18.9	17.0	10.9	6.9	4.8
Cortland	Truxton	41.0	18.0	16.0	10.1	6.3	4.3
Cortland	Virgl	39.7	17.8	15.1	9.4	5.7	3.8
Cortland	Willet	40.4	17.7	15.6	9.8	6.0	4.1
Delaware	Andes	41.3	17.9	16.1	10.3	6.4	4.4
Delaware	Bovina	40.1	17.0	15.2	9.5	5.8	3.9
Delaware	Colchester	44.3	19.9	18.7	12.4	8.1	5.8
Delaware	Davenport	39.5	16.9	14.8	9.1	5.5	3.7
Delaware	Delhi	41.3	18.1	16.2	10.3	6.4	4.4
Delaware	Deposit	43.4	19.8	18.1	11.8	7.6	5.4
Delaware	Franklin	42.2	18.8	17.0	10.9	6.9	4.8
Delaware	Hamden	43.1	19.2	17.7	11.5	7.4	5.2
Delaware	Hancock	43.7	20.1	18.4	12.1	7.8	5.5
Delaware	Harpersfield	39.0	16.9	14.5	8.9	5.3	3.5
Delaware	Kortright	39.4	17.0	14.7	9.1	5.5	3.6
Delaware	Masonville	43.3	19.4	17.9	11.7	7.5	5.3
Delaware	Meredith	41.3	18.3	16.3	10.4	6.4	4.4
Delaware	Middletown	39.1	16.9	14.5	8.9	5.3	3.5

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Delaware	Roxbury	41.1	18.1	16.1	10.2	6.3	4.3
Delaware	Sidney	41.0	18.1	16.0	10.1	6.3	4.3
Delaware	Stamford	40.7	17.8	15.8	9.9	6.1	4.2
Delaware	Tompkins	43.7	20.1	18.3	12.0	7.8	5.5
Delaware	Walton	45.2	20.6	19.5	13.0	8.6	6.2
Dutchess	Amenia	42.0	18.7	16.9	10.8	6.8	4.7
Dutchess	Beekman	45.2	21.2	19.7	13.1	8.7	6.3
Dutchess	Clinton	43.1	19.4	17.8	11.6	7.4	5.2
Dutchess	Dover	44.7	21.0	19.3	12.8	8.4	6.0
Dutchess	East Fishkill	44.5	20.5	19.0	12.6	8.2	5.9
Dutchess	Fishkill	44.5	20.4	19.0	12.5	8.2	5.9
Dutchess	Hyde Park	43.7	20.1	18.4	12.0	7.8	5.5
Dutchess	La Grange	42.9	19.1	17.5	11.4	7.3	5.1
Dutchess	Milan	42.4	19.1	17.2	11.1	7.0	4.9
Dutchess	Northeast	43.9	19.8	18.4	12.1	7.8	5.6
Dutchess	Pawling	46.1	22.0	20.5	13.8	9.2	6.7
Dutchess	Pine Plains	41.8	18.9	16.8	10.8	6.8	4.7
Dutchess	Pleasant Val'y	43.0	19.0	17.6	11.4	7.3	5.1
Dutchess	Poughkeepsie	41.7	19.0	16.7	10.7	6.7	4.6
Dutchess	Red Hook	42.6	19.6	17.5	11.4	7.2	5.1
Dutchess	Rhinebeck	44.1	20.6	18.8	12.4	8.0	5.8
Dutchess	Stanford	41.0	18.2	16.1	10.2	6.3	4.3
Dutchess	Union Vale	44.2	19.7	18.6	12.2	8.0	5.7
Dutchess	Wappinger	41.9	19.0	16.9	10.8	6.8	4.7
Dutchess	Washington	41.9	18.7	16.8	10.8	6.8	4.7
Erie	Alden	37.9	17.5	14.0	8.4	4.9	3.2
Erie	Amherst	37.9	18.0	14.1	8.5	4.9	3.2
Erie	Aurora	42.8	20.5	17.9	11.6	7.4	5.2
Erie	Boston	45.1	21.9	19.8	13.2	8.7	6.3
Erie	Brant	38.2	17.1	14.0	8.5	5.0	3.2
Erie	Cheektowaga	39.0	18.5	14.9	9.2	5.5	3.6
Erie	Clarence	37.4	17.3	13.6	8.1	4.7	3.0
Erie	Colden	47.1	22.8	21.5	14.6	9.9	7.3
Erie	Collins	39.9	18.4	15.5	9.6	5.9	3.9
Erie	Concord	44.8	21.2	19.4	12.9	8.4	6.1
Erie	Eden	40.7	18.7	16.0	10.1	6.2	4.2
Erie	Elma	39.6	18.6	15.3	9.5	5.7	3.8
Erie	Evans	37.9	17.0	13.8	8.3	4.8	3.1
Erie	Hamburg	38.5	17.7	14.3	8.7	5.1	3.4

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Erie	Holland	43.7	20.4	18.5	12.1	7.8	5.6
Erie	Lackawana	37.1	17.6	13.5	8.0	4.6	2.9
Erie	Lancaster	39.0	18.5	14.9	9.2	5.5	3.6
Erie	Marilla	39.8	18.4	15.4	9.6	5.8	3.9
Erie	Newstead	36.4	15.9	12.6	7.4	4.1	2.6
Erie	North Collins	42.2	20.0	17.4	11.2	7.1	4.9
Erie	Orchard Park	41.3	19.5	16.7	10.6	6.6	4.5
Erie	Sardinia	43.9	20.1	18.5	12.2	7.9	5.6
Erie	Tonawanda	37.6	18.3	13.9	8.4	4.8	3.1
Erie	Wales	42.5	20.1	17.6	11.4	7.2	5.1
Erie	West Seneca	39.0	18.5	14.9	9.2	5.5	3.6
Essex	Chesterfield	34.7	14.6	11.2	6.4	3.4	2.0
Essex	Crown Point	37.6	16.5	13.5	8.1	4.7	3.0
Essex	Elizabethtown	37.6	16.6	13.5	8.1	4.7	3.0
Essex	Essex	34.4	14.3	11.0	6.2	3.3	1.9
Essex	Jay	35.8	15.5	12.1	7.0	3.9	2.3
Essex	Keene	42.2	18.1	16.8	10.8	6.8	4.7
Essex	Lewis	36.6	15.9	12.7	7.5	4.2	2.6
Essex	Minerva	42.5	19.2	17.3	11.2	7.1	5.0
Essex	Moriah	37.5	16.4	13.4	8.0	4.6	2.9
Essex	Newcomb	43.4	19.2	17.9	11.7	7.5	5.3
Essex	North Elba	41.4	18.1	16.3	10.3	6.4	4.4
Essex	North Hudson	41.3	18.3	16.3	10.4	6.5	4.4
Essex	Schroon	40.6	18.2	15.8	10.0	6.1	4.2
Essex	St. Armand	39.5	17.4	14.9	9.2	5.5	3.7
Essex	Ticonderoga	38.2	16.8	13.9	8.5	5.0	3.2
Essex	Westport	35.7	15.2	12.0	6.9	3.8	2.3
Essex	Willsboro	33.2	13.8	10.1	5.5	2.8	1.5
Essex	Wilmington	38.8	16.7	14.2	8.7	5.2	3.4
Franklin	Altamont	41.7	18.1	16.5	10.5	6.6	4.6
Franklin	Bangor	36.4	15.6	12.5	7.3	4.1	2.5
Franklin	Bellmont	43.0	18.7	17.5	11.4	7.3	5.1
Franklin	Bombay	35.0	14.8	11.5	6.5	3.5	2.1
Franklin	Brandon	40.9	17.7	15.9	10.0	6.2	4.2
Franklin	Brighton	40.0	17.5	15.2	9.5	5.8	3.9
Franklin	Burke	36.6	15.6	12.6	7.4	4.2	2.6
Franklin	Chateaugay	37.3	16.0	13.2	7.9	4.5	2.9
Franklin	Constable	35.1	14.9	11.5	6.6	3.6	2.1
Franklin	Dickinson	37.9	16.1	13.5	8.2	4.7	3.0

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Franklin	Duane	41.6	17.9	16.4	10.4	6.5	4.5
Franklin	Fort Covington	35.0	14.5	11.4	6.5	3.5	2.1
Franklin	Franklin	39.5	17.2	14.8	9.2	5.5	3.7
Franklin	Harriestown	40.8	17.9	15.9	10.0	6.2	4.2
Franklin	Malone	40.3	17.5	15.5	9.7	5.9	4.0
Franklin	Moira	35.1	15.0	11.6	6.6	3.6	2.1
Franklin	Santa Clara	41.0	17.7	15.9	10.1	6.2	4.3
Franklin	Waverly	40.9	17.8	15.9	10.1	6.2	4.3
Franklin	Westville	35.0	14.7	11.4	6.5	3.5	2.1
Fulton	Bleeker	50.3	24.7	24.2	17.0	11.8	9.0
Fulton	Broadalbin	43.0	20.4	18.0	11.7	7.5	5.3
Fulton	Caroga	50.6	24.5	24.4	17.1	11.9	9.1
Fulton	Ephratah	45.0	20.7	19.4	12.9	8.5	6.1
Fulton	Johnstown	44.2	20.6	18.8	12.4	8.1	5.8
Fulton	Mayfield	45.6	21.7	20.1	13.5	8.9	6.5
Fulton	Northampton	43.6	20.6	18.5	12.1	7.8	5.5
Fulton	Oppenheim	44.6	20.3	19.0	12.6	8.2	5.9
Fulton	Perth	42.3	19.6	17.3	11.2	7.1	4.9
Fulton	Stratford	49.8	23.3	23.4	16.3	11.3	8.6
Genesee	Alabama	35.0	14.6	11.4	6.5	3.5	2.1
Genesee	Alexander	36.0	15.0	12.1	7.0	3.9	2.4
Genesee	Batavia	35.0	14.5	11.4	6.5	3.5	2.1
Genesee	Bergen	32.1	13.9	9.6	5.1	2.5	1.3
Genesee	Bethany	35.9	15.0	12.0	7.0	3.9	2.4
Genesee	Byron	33.0	14.4	10.2	5.5	2.8	1.5
Genesee	Darien	36.9	16.1	13.0	7.7	4.4	2.7
Genesee	Elba	33.5	14.5	10.5	5.8	3.0	1.7
Genesee	Le Roy	33.7	14.4	10.6	5.8	3.0	1.7
Genesee	Oakfield	34.7	14.5	11.2	6.3	3.4	2.0
Genesee	Pavilion	35.6	15.2	11.9	6.9	3.8	2.3
Genesee	Pembroke	35.4	14.7	11.6	6.7	3.6	2.2
Genesee	Stafford	34.8	14.5	11.3	6.4	3.4	2.0
Greene	Ashland	38.9	17.6	14.6	9.0	5.3	3.5
Greene	Athens	39.2	17.8	14.8	9.1	5.5	3.6
Greene	Cairo	38.6	17.6	14.4	8.8	5.2	3.4
Greene	Catskill	40.8	18.8	16.1	10.2	6.3	4.3
Greene	Coxsackie	38.8	16.9	14.3	8.8	5.2	3.4
Greene	Durham	37.9	17.1	13.8	8.3	4.9	3.1
Greene	Greenville	38.7	17.0	14.3	8.7	5.2	3.4

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Greene	Halcott	45.2	21.0	19.7	13.1	8.7	6.3
Greene	Hunter	45.9	21.4	20.2	13.6	9.0	6.6
Greene	Jewett	41.8	19.2	16.9	10.8	6.8	4.7
Greene	Lexington	46.0	21.9	20.4	13.7	9.2	6.7
Greene	New Baltimore	37.7	16.3	13.5	8.1	4.7	3.0
Greene	Prattsville	37.0	16.3	13.0	7.7	4.4	2.8
Greene	Windham	41.6	19.2	16.8	10.7	6.7	4.6
Hamilton	Arietta	55.3	27.4	28.5	20.7	15.0	11.9
Hamilton	Benson	51.6	25.7	25.5	18.0	12.7	9.8
Hamilton	Hope	47.2	22.9	21.5	14.7	9.9	7.3
Hamilton	Indian Lake	43.7	20.3	18.4	12.1	7.8	5.6
Hamilton	Inlet	50.1	24.1	23.9	16.7	11.6	8.9
Hamilton	Lake Pleasant	52.4	25.8	26.0	18.5	13.2	10.2
Hamilton	Long Lake	46.1	21.1	20.2	13.6	9.1	6.6
Hamilton	Morehouse	54.7	27.1	28.0	20.3	14.7	11.5
Hamilton	Wells	48.7	23.7	22.8	15.7	10.8	8.1
Herkimer	Columbia	42.9	18.7	17.5	11.3	7.2	5.1
Herkimer	Danube	41.3	18.7	16.4	10.5	6.5	4.5
Herkimer	Fairfield	44.0	19.7	18.4	12.1	7.9	5.6
Herkimer	Frankfort	43.0	18.8	17.5	11.4	7.3	5.1
Herkimer	German Flatts	42.5	19.0	17.2	11.1	7.1	4.9
Herkimer	Herkimer	42.4	19.1	17.2	11.1	7.0	4.9
Herkimer	Litchfield	42.8	18.9	17.4	11.3	7.2	5.0
Herkimer	Little Falls	42.0	19.0	17.0	10.9	6.9	4.8
Herkimer	Manheim	42.5	19.5	17.4	11.2	7.1	5.0
Herkimer	Newport	46.3	21.3	20.4	13.8	9.2	6.8
Herkimer	Norway	49.8	23.1	23.3	16.3	11.3	8.6
Herkimer	Ohio	53.0	25.9	26.5	18.9	13.5	10.5
Herkimer	Russia	51.5	24.5	24.9	17.6	12.4	9.5
Herkimer	Salisbury	49.5	22.9	23.1	16.1	11.1	8.4
Herkimer	Schuyler	44.7	20.1	19.0	12.6	8.2	5.9
Herkimer	Stark	42.6	19.0	17.3	11.2	7.1	5.0
Herkimer	Warren	43.0	19.0	17.6	11.4	7.3	5.1
Herkimer	Webb	48.4	22.9	22.3	15.4	10.5	7.9
Herkimer	Winfield	41.4	18.5	16.4	10.5	6.5	4.5
Jefferson	Adams	38.2	19.0	14.5	8.8	5.2	3.3
Jefferson	Alexandria	37.0	17.3	13.3	7.9	4.5	2.8
Jefferson	Antwerp	37.5	17.1	13.6	8.1	4.7	3.0
Jefferson	Brownville	33.3	16.3	10.8	5.9	3.0	1.7

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Jefferson	Cape Vincent	35.0	17.4	12.1	6.9	3.7	2.2
Jefferson	Champion	43.9	21.9	19.0	12.5	8.1	5.8
Jefferson	Clayton	35.3	17.3	12.3	7.1	3.8	2.3
Jefferson	Ellisburg	39.9	20.3	16.0	10.0	6.0	4.0
Jefferson	Henderson	36.3	17.9	13.0	7.6	4.2	2.6
Jefferson	Hounsfield	33.4	16.5	10.9	6.0	3.1	1.7
Jefferson	Le Ray	38.6	19.0	14.8	9.0	5.3	3.5
Jefferson	Lorraine	48.0	24.8	22.7	15.6	10.6	7.9
Jefferson	Lyme	34.1	16.9	11.4	6.4	3.3	1.9
Jefferson	Orleans	36.2	17.5	12.8	7.5	4.2	2.6
Jefferson	Pamelia	36.0	17.7	12.8	7.5	4.1	2.5
Jefferson	Philadelphia	38.8	18.4	14.7	9.0	5.4	3.5
Jefferson	Rodman	46.6	23.8	21.4	14.5	9.7	7.1
Jefferson	Rutland	45.4	23.0	20.4	13.6	9.0	6.6
Jefferson	Theresa	37.9	17.8	14.0	8.5	4.9	3.2
Jefferson	Watertown	40.7	20.3	16.5	10.4	6.4	4.4
Jefferson	Wilna	39.1	18.3	14.9	9.2	5.5	3.6
Jefferson	Worth	54.6	29.0	28.6	20.7	15.0	11.8
Lewis	Croghan	40.8	19.1	16.2	10.2	6.3	4.3
Lewis	Denmark	43.4	21.3	18.6	12.1	7.8	5.5
Lewis	Diana	39.7	18.4	15.3	9.5	5.8	3.8
Lewis	Greig	47.4	22.9	21.6	14.8	10.0	7.4
Lewis	Harrisburg	53.9	28.1	27.9	20.0	14.4	11.3
Lewis	Lewis	55.7	28.2	29.1	21.2	15.5	12.2
Lewis	Leyden	53.2	26.8	26.9	19.3	13.8	10.7
Lewis	Lowville	43.4	21.4	18.6	12.1	7.8	5.5
Lewis	Lyonsdale	49.4	24.2	23.5	16.3	11.3	8.5
Lewis	Martinsburg	53.9	27.6	27.7	19.9	14.3	11.2
Lewis	Montague	59.5	32.1	33.2	24.7	18.5	14.9
Lewis	New Bremen	40.4	19.1	15.9	10.0	6.1	4.1
Lewis	Osceola	55.7	28.7	29.3	21.3	15.5	12.3
Lewis	Pickney	53.8	28.3	27.8	20.0	14.4	11.2
Lewis	Turin	50.0	24.4	23.9	16.7	11.6	8.8
Lewis	Watson	44.7	21.3	19.4	12.9	8.4	6.1
Lewis	West Turin	55.2	27.0	28.4	20.6	15.0	11.8
Livingston	Avon	31.1	12.5	8.7	4.5	2.1	1.0
Livingston	Caledonia	31.6	13.2	9.1	4.8	2.3	1.1
Livingston	Conesus	34.2	13.8	10.7	6.0	3.2	1.8
Livingston	Geneseo	31.5	12.8	9.0	4.7	2.2	1.1

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Livingston	Groveland	31.4	12.6	8.8	4.6	2.2	1.1
Livingston	Leicester	30.4	12.3	8.3	4.2	1.9	0.9
Livingston	Lima	32.3	13.1	9.5	5.0	2.5	1.3
Livingston	Livonia	33.1	13.4	10.0	5.5	2.8	1.5
Livingston	Mount Morris	31.2	12.7	8.8	4.5	2.1	1.0
Livingston	N. Dansville	32.5	12.8	9.5	5.1	2.5	1.3
Livingston	Nunda	35.0	14.5	11.4	6.5	3.5	2.1
Livingston	Ossian	34.4	14.0	10.9	6.2	3.3	1.9
Livingston	Portage	34.7	14.5	11.2	6.4	3.4	2.0
Livingston	Sparta	33.3	13.3	10.1	5.5	2.8	1.5
Livingston	Springwater	34.9	13.6	11.1	6.3	3.4	2.0
Livingston	West Sparta	32.6	13.1	9.6	5.2	2.6	1.4
Livingston	York	32.2	13.5	9.5	5.1	2.5	1.3
Madison	Brookfield	40.6	17.8	15.7	9.9	6.1	4.1
Madison	Cazenovia	41.7	19.0	16.7	10.7	6.7	4.6
Madison	De Ruyter	41.0	17.8	15.9	10.1	6.3	4.3
Madison	Eaton	39.4	17.6	14.9	9.2	5.6	3.7
Madison	Fenner	43.2	19.6	17.9	11.6	7.5	5.3
Madison	Georgetown	41.0	18.1	16.0	10.2	6.3	4.3
Madison	Hamilton	39.1	17.4	14.6	9.0	5.4	3.5
Madison	Lebanon	39.6	17.5	15.0	9.3	5.6	3.7
Madison	Lenox	41.0	18.1	16.0	10.2	6.3	4.3
Madison	Lincoln	41.8	19.3	16.9	10.8	6.8	4.7
Madison	Madison	40.4	17.7	15.6	9.8	6.0	4.1
Madison	Nelson	41.4	18.6	16.4	10.5	6.5	4.5
Madison	Oneida	41.3	19.0	16.5	10.5	6.5	4.5
Madison	Smithfield	41.5	18.6	16.5	10.5	6.6	4.5
Madison	Stockbridge	40.7	18.2	15.9	10.0	6.2	4.2
Madison	Sullivan	41.0	18.4	16.1	10.2	6.3	4.3
Monroe	Brighton	32.9	15.0	10.3	5.6	2.8	1.5
Monroe	Chili	31.1	14.0	9.0	4.6	2.1	1.0
Monroe	Clarkson	30.2	12.4	8.2	4.1	1.8	0.8
Monroe	E.Rochester	33.0	14.5	10.2	5.6	2.8	1.5
Monroe	Gates	31.1	14.4	9.1	4.7	2.2	1.1
Monroe	Greece	32.0	14.5	9.6	5.1	2.5	1.3
Monroe	Hamlin	31.0	13.8	8.9	4.6	2.1	1.0
Monroe	Henrietta	32.1	14.1	9.6	5.1	2.5	1.3
Monroe	Irondequoit	33.0	15.5	10.4	5.7	2.9	1.6
Monroe	Mendon	31.7	13.7	9.3	4.9	2.3	1.2

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Monroe	Ogden	31.0	13.6	8.9	4.5	2.1	1.0
Monroe	Parma	31.1	13.8	8.9	4.6	2.1	1.0
Monroe	Penfield	33.3	15.1	10.5	5.8	2.9	1.6
Monroe	Perinton	33.0	14.5	10.2	5.6	2.8	1.5
Monroe	Pittsford	33.0	14.5	10.2	5.6	2.8	1.5
Monroe	Riga	31.3	13.6	9.0	4.7	2.2	1.1
Monroe	Rush	31.0	13.1	8.8	4.5	2.1	1.0
Monroe	Sweden	30.9	13.1	8.7	4.4	2.0	1.0
Monroe	Webster	34.5	16.1	11.5	6.5	3.4	2.0
Monroe	Wheatland	31.5	13.5	9.1	4.8	2.2	1.1
Montgomery	Amsterdam	40.0	18.7	15.6	9.7	5.9	4.0
Montgomery	Canajoharie	41.0	18.4	16.1	10.2	6.3	4.3
Montgomery	Charleston	43.1	19.7	17.8	11.6	7.4	5.2
Montgomery	Florida	40.1	18.7	15.7	9.8	6.0	4.0
Montgomery	Glen	40.0	18.6	15.5	9.7	5.9	4.0
Montgomery	Minden	41.1	18.5	16.2	10.3	6.4	4.4
Montgomery	Mohawk	39.8	18.5	15.4	9.6	5.8	3.9
Montgomery	Palatine	41.3	18.8	16.5	10.5	6.5	4.5
Montgomery	Root	40.9	18.7	16.1	10.2	6.3	4.3
Montgomery	St Johnsville	42.5	19.5	17.4	11.3	7.2	5.0
Nassau	Glen Cove	45.4	21.7	20.0	13.4	8.8	6.4
Nassau	Hempstead	44.2	21.3	19.0	12.5	8.2	5.8
Nassau	Long Beach	43.0	21.0	18.2	11.8	7.6	5.3
Nassau	N Hempstead	45.0	21.7	19.7	13.1	8.6	6.2
Nassau	Oyster Bay	45.1	21.8	19.8	13.2	8.7	6.3
Niagara	Cambria	35.4	16.1	12.0	6.9	3.8	2.3
Niagara	Hartland	34.8	15.8	11.6	6.6	3.5	2.1
Niagara	Lewiston	34.4	15.4	11.2	6.3	3.3	1.9
Niagara	Lockport	36.7	16.9	13.0	7.7	4.4	2.7
Niagara	Newfane	33.3	14.9	10.5	5.7	2.9	1.6
Niagara	Niagara	37.0	16.9	13.2	7.8	4.5	2.8
Niagara	Pendleton	37.0	17.0	13.2	7.9	4.5	2.8
Niagara	Porter	32.1	14.4	9.7	5.1	2.5	1.3
Niagara	Royalton	36.5	16.3	12.8	7.5	4.2	2.6
Niagara	Somerset	33.2	14.6	10.3	5.6	2.9	1.6
Niagara	Wheatfield	37.0	17.0	13.2	7.9	4.5	2.8
Niagara	Wilson	31.6	13.9	9.3	4.9	2.3	1.2
Oneida	Annsville	49.7	24.4	23.7	16.5	11.4	8.7
Oneida	Augusta	42.0	18.8	16.9	10.8	6.8	4.7

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Oneida	Ava	57.7	29.9	31.1	22.9	16.9	13.5
Oneida	Boonville	56.0	28.9	29.6	21.6	15.7	12.5
Oneida	Bridgewater	42.2	18.5	16.9	10.9	6.9	4.8
Oneida	Camden	48.7	24.0	22.9	15.8	10.9	8.2
Oneida	Deerfield	47.4	22.2	21.5	14.6	9.9	7.3
Oneida	Florence	52.9	27.2	26.8	19.2	13.7	10.6
Oneida	Floyd	46.8	22.4	21.1	14.3	9.6	7.1
Oneida	Forestport	53.8	26.9	27.3	19.6	14.1	11.0
Oneida	Kirkland	43.1	20.2	18.0	11.7	7.5	5.3
Oneida	Lee	49.0	23.9	23.1	16.0	11.0	8.3
Oneida	Marcy	45.3	21.2	19.7	13.2	8.7	6.3
Oneida	Marshall	42.7	19.3	17.5	11.3	7.2	5.1
Oneida	New Hartford	43.0	20.0	17.9	11.6	7.4	5.2
Oneida	Paris	43.0	19.5	17.7	11.5	7.4	5.2
Oneida	Remsen	52.9	25.6	26.3	18.8	13.4	10.4
Oneida	Rome	44.5	21.1	19.2	12.7	8.3	6.0
Oneida	Sangerfield	41.9	18.4	16.7	10.7	6.7	4.7
Oneida	Steuben	54.7	27.3	28.1	20.3	14.7	11.5
Oneida	Trenton	47.7	22.4	21.7	14.9	10.1	7.5
Oneida	Utica	43.0	19.4	17.7	11.5	7.4	5.2
Oneida	Vernon	43.1	20.2	18.0	11.7	7.5	5.3
Oneida	Verona	42.5	19.4	17.4	11.2	7.1	5.0
Oneida	Vienna	43.7	20.4	18.5	12.1	7.8	5.6
Oneida	Western	51.9	25.9	25.7	18.2	12.9	10.0
Oneida	Westmoreland	44.7	20.8	19.2	12.8	8.4	6.0
Oneida	Whitestown	43.8	20.7	18.6	12.2	7.9	5.6
Onondaga	Camillus	39.0	17.9	14.7	9.1	5.4	3.5
Onondaga	Cicero	40.9	18.5	16.1	10.2	6.3	4.3
Onondaga	Clay	41.2	19.5	16.6	10.5	6.5	4.5
Onondaga	Dewitt	40.4	17.8	15.6	9.8	6.0	4.1
Onondaga	Elbridge	38.4	17.4	14.2	8.6	5.1	3.3
Onondaga	Fabius	41.0	17.8	15.9	10.1	6.3	4.3
Onondaga	Geddes	39.3	18.1	15.0	9.2	5.5	3.7
Onondaga	Lafayette	40.0	17.6	15.3	9.5	5.8	3.9
Onondaga	Lysander	40.2	19.0	15.8	9.9	6.0	4.1
Onondaga	Manilus	41.0	18.3	16.1	10.2	6.3	4.3
Onondaga	Marcellus	39.0	17.9	14.7	9.0	5.4	3.5
Onondaga	Onondaga	39.6	17.7	15.1	9.4	5.6	3.8
Onondaga	Otisco	39.1	17.6	14.7	9.1	5.4	3.6

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Onondaga	Pompey	41.0	18.2	16.1	10.2	6.3	4.3
Onondaga	Salina	39.4	17.8	15.0	9.3	5.6	3.7
Onondaga	Skaneateles	39.0	17.8	14.7	9.0	5.4	3.5
Onondaga	Spafford	39.3	17.9	14.9	9.2	5.5	3.7
Onondaga	Tully	40.0	17.5	15.3	9.5	5.8	3.9
Onondaga	Van Buren	39.7	18.5	15.3	9.5	5.8	3.8
Ontario	Bristol	34.3	14.3	10.9	6.1	3.2	1.9
Ontario	Canadice	34.7	13.9	11.0	6.3	3.3	2.0
Ontario	Canandaigua	33.1	13.7	10.1	5.5	2.8	1.5
Ontario	E. Bloomfield	33.0	13.5	10.0	5.4	2.7	1.5
Ontario	Farmington	33.0	14.3	10.2	5.5	2.8	1.5
Ontario	Geneva	33.0	13.9	10.1	5.5	2.8	1.5
Ontario	Gorham	33.0	13.9	10.1	5.5	2.8	1.5
Ontario	Hopewell	33.0	14.1	10.1	5.5	2.8	1.5
Ontario	Manchester	33.3	14.8	10.5	5.7	2.9	1.6
Ontario	Naples	33.5	13.1	10.2	5.6	2.9	1.6
Ontario	Phelps	33.2	14.6	10.3	5.7	2.9	1.6
Ontario	Richmond	33.3	13.5	10.1	5.6	2.8	1.6
Ontario	Seneca	33.0	14.4	10.2	5.5	2.8	1.5
Ontario	South Bristol	34.5	14.0	11.0	6.2	3.3	1.9
Ontario	Victor	33.0	14.1	10.1	5.5	2.8	1.5
Ontario	W. Bloomfield	32.8	13.5	9.8	5.3	2.7	1.4
Orange	Blooming Grove	45.6	21.1	19.9	13.3	8.8	6.4
Orange	Chester	45.6	20.8	19.8	13.3	8.8	6.4
Orange	Cornwall	47.1	22.1	21.3	14.5	9.8	7.2
Orange	Crawford	43.3	19.6	18.0	11.7	7.5	5.3
Orange	Deerpark	44.4	20.1	18.8	12.5	8.1	5.8
Orange	Goshen	43.1	19.2	17.7	11.5	7.4	5.2
Orange	Greenville	43.5	19.6	18.1	11.8	7.6	5.4
Orange	Hamptonburgh	43.1	19.3	17.8	11.6	7.4	5.2
Orange	Highlands	48.6	22.7	22.4	15.5	10.6	8.0
Orange	Minisink	43.0	19.4	17.7	11.5	7.4	5.2
Orange	Monroe	47.9	22.2	21.8	15.0	10.2	7.6
Orange	Montgomery	43.1	19.7	17.9	11.7	7.5	5.3
Orange	Mount Hope	43.0	19.1	17.6	11.5	7.3	5.2
Orange	New Windsor	44.5	20.5	19.0	12.6	8.2	5.9
Orange	Newburgh	44.1	20.0	18.6	12.2	7.9	5.7
Orange	Tuxedo	49.6	23.3	23.3	16.2	11.2	8.5
Orange	Wallkill	43.0	19.0	17.6	11.4	7.3	5.2

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Orange	Warwick	46.8	21.6	20.9	14.2	9.5	7.0
Orange	Wawayanda	43.0	19.0	17.6	11.4	7.3	5.2
Orange	Woodbury	48.6	22.6	22.4	15.5	10.6	8.0
Orleans	Albion	32.8	14.5	10.1	5.5	2.7	1.5
Orleans	Barre	33.3	14.5	10.4	5.7	2.9	1.6
Orleans	Carlton	32.5	14.5	9.9	5.3	2.6	1.4
Orleans	Clarendon	31.5	13.7	9.2	4.8	2.3	1.1
Orleans	Gaines	32.3	14.5	9.8	5.2	2.6	1.3
Orleans	Kendall	31.0	14.2	9.0	4.6	2.1	1.0
Orleans	Murray	31.0	13.2	8.8	4.5	2.1	1.0
Orleans	Ridgeway	34.4	15.2	11.2	6.3	3.3	1.9
Orleans	Shelby	35.0	15.3	11.6	6.6	3.6	2.1
Orleans	Yates	33.1	14.6	10.3	5.6	2.8	1.6
Oswego	Albion	46.0	23.4	20.9	14.1	9.4	6.9
Oswego	Amboy	47.8	23.9	22.2	15.2	10.4	7.7
Oswego	Boylston	52.7	27.9	26.9	19.2	13.7	10.6
Oswego	Constantia	43.4	20.9	18.4	12.0	7.7	5.5
Oswego	Granby	40.7	19.8	16.4	10.3	6.4	4.3
Oswego	Hannibal	39.6	19.6	15.5	9.6	5.8	3.9
Oswego	Hastings	43.3	21.2	18.4	12.0	7.7	5.5
Oswego	Mexico	42.4	20.8	17.8	11.5	7.3	5.1
Oswego	Minetto	41.0	20.6	16.7	10.6	6.6	4.5
Oswego	New Haven	41.2	20.6	16.9	10.7	6.7	4.6
Oswego	Orwell	51.1	27.0	25.5	18.0	12.6	9.7
Oswego	Oswego	41.0	20.6	16.8	10.6	6.6	4.5
Oswego	Palermo	43.0	20.8	18.1	11.8	7.5	5.3
Oswego	Parish	45.7	22.9	20.5	13.8	9.1	6.7
Oswego	Redfield	53.2	27.9	27.3	19.5	14.0	10.8
Oswego	Richland	41.8	20.8	17.3	11.1	6.9	4.8
Oswego	Sandy Creek	41.8	21.2	17.5	11.2	7.0	4.9
Oswego	Schroepfel	42.2	20.4	17.5	11.2	7.1	4.9
Oswego	Scriba	41.0	20.9	16.8	10.7	6.6	4.5
Oswego	Volney	41.2	20.5	16.8	10.7	6.6	4.5
Oswego	West Monroe	43.6	21.3	18.6	12.2	7.9	5.6
Oswego	Williamstown	49.6	25.5	24.0	16.7	11.6	8.7
Otsego	Burlington	41.0	18.0	16.0	10.1	6.3	4.3
Otsego	Butternuts	39.5	17.4	14.9	9.2	5.5	3.7
Otsego	Cherry Valley	43.5	19.8	18.2	11.9	7.7	5.4
Otsego	Decatur	43.0	19.4	17.7	11.5	7.4	5.2

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Otsego	Edmeston	39.7	17.6	15.1	9.4	5.7	3.8
Otsego	Exeter	41.9	18.5	16.7	10.7	6.7	4.7
Otsego	Hartwick	40.0	17.8	15.3	9.6	5.8	3.9
Otsego	Laurens	39.8	17.5	15.1	9.4	5.7	3.8
Otsego	Maryland	39.6	17.2	14.9	9.2	5.6	3.7
Otsego	Middlefield	40.9	18.2	16.0	10.1	6.3	4.3
Otsego	Milford	39.2	17.3	14.7	9.1	5.4	3.6
Otsego	Morris	39.8	17.5	15.1	9.4	5.7	3.8
Otsego	New Lisbon	40.8	17.8	15.8	10.0	6.2	4.2
Otsego	Oneonta	39.3	17.3	14.8	9.1	5.5	3.6
Otsego	Otego	40.2	17.5	15.3	9.6	5.9	3.9
Otsego	Otsego	40.8	18.2	15.9	10.1	6.2	4.2
Otsego	Pittsfield	40.2	17.7	15.4	9.6	5.9	4.0
Otsego	Plainfield	41.6	18.3	16.5	10.5	6.6	4.5
Otsego	Richfield	42.7	18.7	17.3	11.2	7.1	5.0
Otsego	Roseboom	43.5	19.6	18.1	11.8	7.6	5.4
Otsego	Springfield	42.5	18.7	17.2	11.1	7.0	4.9
Otsego	Unadilla	39.3	17.3	14.8	9.1	5.5	3.6
Otsego	Westford	41.7	18.5	16.6	10.6	6.6	4.6
Otsego	Worcester	40.2	17.6	15.4	9.6	5.9	4.0
Putnam	Carmel	48.8	23.3	22.8	15.7	10.8	8.1
Putnam	Kent	47.3	22.1	21.3	14.5	9.8	7.3
Putnam	Patterson	47.3	22.1	21.3	14.5	9.8	7.3
Putnam	Philipstown	47.8	22.1	21.7	14.9	10.1	7.5
Putnam	Putnam Valley	48.7	23.2	22.7	15.6	10.7	8.1
Putnam	Southeast	48.9	23.3	22.8	15.8	10.9	8.2
Rensselaer	Berlin	45.3	20.1	19.4	13.0	8.6	6.2
Rensselaer	Brunswick	38.8	16.6	14.2	8.7	5.2	3.4
Rensselaer	East Greenbush	37.3	16.2	13.2	7.9	4.5	2.9
Rensselaer	Grafton	45.0	19.3	19.0	12.6	8.3	6.0
Rensselaer	Hoosick	37.5	16.0	13.3	8.0	4.6	2.9
Rensselaer	Nassau	40.7	18.0	15.9	10.0	6.2	4.2
Rensselaer	No. Greenbush	37.5	16.2	13.3	8.0	4.6	2.9
Rensselaer	Petersburg	42.4	18.3	17.0	11.0	7.0	4.9
Rensselaer	Pittstown	37.1	15.9	13.0	7.7	4.4	2.8
Rensselaer	Poestenkill	42.5	18.3	17.0	11.0	7.0	4.9
Rensselaer	Sand Lake	41.2	18.0	16.2	10.3	6.4	4.4
Rensselaer	Schaghticoke	37.0	15.9	12.9	7.7	4.4	2.7
Rensselaer	Schodack	38.1	16.3	13.7	8.3	4.9	3.1

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Rensselaer	Stephentown	42.3	18.7	17.1	11.0	7.0	4.9
Rockland	Clarkstown	47.3	22.0	21.3	14.5	9.8	7.3
Rockland	Haverstraw	48.9	22.7	22.6	15.6	10.8	8.1
Rockland	Orangetown	47.8	22.5	21.9	15.0	10.2	7.6
Rockland	Ramapo	49.3	22.4	22.8	15.8	10.9	8.2
Rockland	Stoney Point	48.3	22.4	22.1	15.2	10.4	7.8
Saratoga	Ballston	39.6	18.4	15.2	9.4	5.7	3.8
Saratoga	Charlton	41.4	19.1	16.6	10.6	6.6	4.5
Saratoga	Clifton Park	36.8	16.2	12.9	7.6	4.3	2.7
Saratoga	Corinth	44.4	21.1	19.1	12.6	8.2	5.9
Saratoga	Day	46.3	22.6	20.8	14.1	9.4	6.9
Saratoga	Edinburg	46.1	22.5	20.7	13.9	9.3	6.8
Saratoga	Galway	43.1	20.3	18.0	11.7	7.5	5.3
Saratoga	Greenfield	43.1	20.1	18.0	11.7	7.5	5.3
Saratoga	Hadley	43.3	20.7	18.3	11.9	7.7	5.4
Saratoga	Halfmoon	37.0	16.0	12.9	7.7	4.4	2.7
Saratoga	Malta	39.5	18.4	15.2	9.4	5.6	3.8
Saratoga	Milton	41.3	19.0	16.5	10.5	6.5	4.5
Saratoga	Moreau	38.0	17.3	14.0	8.4	4.9	3.2
Saratoga	Northumberland	37.9	17.3	13.9	8.4	4.9	3.1
Saratoga	Providence	45.6	21.9	20.2	13.5	8.9	6.5
Saratoga	Saratoga	38.6	17.9	14.5	8.8	5.2	3.4
Saratoga	Saratoga Sprgs	40.6	18.7	16.0	10.1	6.2	4.2
Saratoga	Stillwater	38.4	17.5	14.3	8.7	5.1	3.3
Saratoga	Waterford	37.0	15.5	12.8	7.6	4.3	2.7
Saratoga	Wilton	39.6	18.5	15.3	9.5	5.7	3.8
Schenectady	Duanesburg	42.3	19.5	17.3	11.2	7.1	4.9
Schenectady	Glenville	39.5	18.2	15.1	9.4	5.6	3.8
Schenectady	Niskayuna	36.9	16.1	12.9	7.6	4.3	2.7
Schenectady	Princetown	41.7	19.4	16.9	10.8	6.8	4.7
Schenectady	Rotterdam	38.9	17.7	14.6	9.0	5.3	3.5
Schenectady	Schenectady	37.0	16.1	13.0	7.7	4.4	2.8
Schoharie	Blenheim	37.5	16.4	13.4	8.0	4.6	2.9
Schoharie	Broome	38.4	16.9	14.1	8.6	5.1	3.3
Schoharie	Carlisle	41.0	18.5	16.2	10.2	6.3	4.3
Schoharie	Cobleskill	40.7	18.4	15.9	10.0	6.2	4.2
Schoharie	Conesville	37.3	16.3	13.2	7.9	4.5	2.9
Schoharie	Esperance	40.4	18.5	15.8	9.9	6.1	4.1
Schoharie	Fulton	38.0	16.9	13.9	8.4	4.9	3.1

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Schoharie	Gilboa	37.2	16.2	13.1	7.8	4.5	2.8
Schoharie	Jefferson	39.0	17.1	14.5	8.9	5.3	3.5
Schoharie	Middleburg	38.8	17.5	14.5	8.9	5.3	3.5
Schoharie	Richmondville	39.9	18.0	15.3	9.5	5.8	3.9
Schoharie	Schoharie	39.5	18.1	15.1	9.3	5.6	3.7
Schoharie	Seward	41.6	18.5	16.6	10.6	6.6	4.6
Schoharie	Sharon	42.4	18.6	17.1	11.0	7.0	4.9
Schoharie	Summit	39.8	17.7	15.2	9.5	5.7	3.8
Schoharie	Wright	39.9	18.3	15.4	9.6	5.8	3.9
Schuyler	Catherine	37.2	16.4	13.2	7.8	4.5	2.8
Schuyler	Cayuta	37.3	16.6	13.3	7.9	4.6	2.9
Schuyler	Dix	33.9	13.8	10.6	5.9	3.1	1.7
Schuyler	Hector	35.9	15.1	12.1	7.0	3.9	2.4
Schuyler	Montour	33.5	13.9	10.4	5.7	2.9	1.6
Schuyler	Orange	33.8	13.8	10.5	5.8	3.0	1.7
Schuyler	Reading	33.9	13.6	10.5	5.9	3.0	1.7
Schuyler	Tyrone	33.6	13.7	10.4	5.7	2.9	1.7
Seneca	Covert	34.7	14.5	11.2	6.4	3.4	2.0
Seneca	Fayette	33.0	13.9	10.1	5.5	2.8	1.5
Seneca	Junius	33.9	14.8	10.8	6.0	3.1	1.8
Seneca	Lodi	34.4	14.2	11.0	6.2	3.3	1.9
Seneca	Ovid	33.9	14.3	10.7	6.0	3.1	1.8
Seneca	Romulus	33.1	14.0	10.1	5.5	2.8	1.5
Seneca	Seneca Falls	33.1	14.4	10.2	5.6	2.8	1.5
Seneca	Tyre	34.7	15.1	11.3	6.4	3.4	2.0
Seneca	Varick	33.0	14.0	10.1	5.5	2.8	1.5
Seneca	Waterloo	33.0	13.6	10.0	5.4	2.7	1.5
St lawrence	Brasher	35.0	15.1	11.5	6.6	3.5	2.1
St lawrence	Canton	35.8	15.2	12.1	7.0	3.9	2.4
St lawrence	Clare	40.6	17.9	15.7	9.9	6.1	4.1
St lawrence	Clifton	43.2	18.7	17.6	11.5	7.4	5.2
St lawrence	Colton	42.0	18.6	16.8	10.8	6.8	4.7
St lawrence	De Peyster	35.7	16.0	12.2	7.0	3.9	2.3
St lawrence	Dekalb	36.8	16.5	13.0	7.7	4.4	2.7
St lawrence	Edwards	39.0	17.1	14.5	8.9	5.3	3.5
St lawrence	Fine	42.5	19.1	17.3	11.2	7.1	5.0
St lawrence	Fowler	37.8	17.0	13.7	8.3	4.8	3.1
St lawrence	Gouverneur	37.0	17.0	13.2	7.9	4.5	2.8
St lawrence	Hammond	37.0	17.0	13.2	7.9	4.5	2.8

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
St lawrence	Hermon	37.2	17.0	13.3	8.0	4.5	2.9
St lawrence	Hopkinton	40.2	17.4	15.3	9.6	5.9	3.9
St lawrence	Lawrence	35.4	15.0	11.7	6.8	3.7	2.2
St lawrence	Lisbon	33.9	14.7	10.8	6.0	3.1	1.8
St lawrence	Louisville	35.0	15.2	11.6	6.6	3.6	2.1
St lawrence	Macomb	37.0	16.9	13.2	7.8	4.5	2.8
St lawrence	Madrid	35.3	15.0	11.7	6.7	3.6	2.2
St lawrence	Massena	35.0	15.6	11.7	6.7	3.6	2.1
St lawrence	Morristown	35.9	16.3	12.4	7.2	4.0	2.4
St lawrence	Norfolk	35.4	15.2	11.8	6.8	3.7	2.2
St lawrence	Ogdensburg	33.0	14.0	10.1	5.5	2.8	1.5
St lawrence	Oswegathcie	34.5	15.3	11.3	6.4	3.4	2.0
St lawrence	Parishville	40.2	17.7	15.5	9.7	5.9	4.0
St lawrence	Piercefield	41.9	18.2	16.6	10.7	6.7	4.6
St lawrence	Pierrepont	38.9	17.2	14.5	8.9	5.3	3.5
St lawrence	Pitcairn	39.5	18.0	15.1	9.3	5.6	3.7
St lawrence	Potsdam	37.0	15.8	12.9	7.7	4.4	2.7
St lawrence	Rossie	37.0	17.0	13.2	7.9	4.5	2.8
St lawrence	Russell	38.2	16.9	14.0	8.5	5.0	3.2
St lawrence	Stockholm	36.1	15.6	12.3	7.2	4.0	2.5
St lawrence	Waddington	35.0	15.0	11.5	6.6	3.5	2.1
Steuben	Addison	31.9	13.5	9.3	4.9	2.4	1.2
Steuben	Avoca	32.6	13.3	9.7	5.2	2.6	1.4
Steuben	Bath	31.2	13.3	8.9	4.6	2.1	1.1
Steuben	Bradford	32.8	13.4	9.8	5.3	2.6	1.4
Steuben	Cameron	32.3	13.5	9.5	5.1	2.5	1.3
Steuben	Campbell	31.6	13.5	9.2	4.8	2.3	1.2
Steuben	Canisteo	33.7	13.6	10.4	5.8	3.0	1.7
Steuben	Caton	32.9	13.6	9.9	5.4	2.7	1.5
Steuben	Cohocton	33.7	13.2	10.3	5.7	2.9	1.6
Steuben	Corning	32.5	13.5	9.7	5.2	2.6	1.4
Steuben	Dansville	33.7	13.5	10.4	5.8	3.0	1.7
Steuben	Erwin	31.0	13.5	8.8	4.5	2.1	1.0
Steuben	Fremont	34.1	13.7	10.6	6.0	3.1	1.8
Steuben	Greenwood	37.4	15.9	13.2	7.9	4.5	2.9
Steuben	Hartsville	36.1	15.2	12.2	7.2	4.0	2.4
Steuben	Hornby	33.3	13.8	10.2	5.6	2.8	1.6
Steuben	Hornellsville	33.3	13.6	10.2	5.6	2.8	1.6
Steuben	Howard	33.7	13.5	10.3	5.7	2.9	1.7

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Steuben	Jasper	34.0	14.1	10.7	5.9	3.1	1.8
Steuben	Lindley	31.3	13.5	9.0	4.7	2.2	1.1
Steuben	Prattsburg	34.7	13.5	10.9	6.2	3.3	1.9
Steuben	Pulteney	32.7	13.1	9.7	5.2	2.6	1.4
Steuben	Rathbone	31.0	13.5	8.9	4.6	2.1	1.0
Steuben	Thurston	31.9	13.5	9.3	4.9	2.4	1.2
Steuben	Troupsburg	33.4	14.0	10.3	5.7	2.9	1.6
Steuben	Tuscarora	32.5	13.5	9.7	5.2	2.6	1.4
Steuben	Urbana	31.3	13.0	8.9	4.6	2.2	1.1
Steuben	Wayland	34.0	13.6	10.6	5.9	3.1	1.8
Steuben	Wayne	32.0	13.0	9.3	4.9	2.4	1.2
Steuben	West Union	37.3	16.0	13.1	7.9	4.5	2.8
Steuben	Wheeler	33.0	13.2	9.9	5.4	2.7	1.5
Steuben	Woodhull	31.7	13.5	9.2	4.8	2.3	1.2
Suffolk	Babylon	45.0	22.0	19.8	13.2	8.7	6.3
Suffolk	Brookhaven	46.1	23.8	21.1	14.2	9.4	6.9
Suffolk	East Hampton	44.7	23.4	20.0	13.3	8.7	6.3
Suffolk	Huntington	45.2	22.7	20.2	13.5	8.9	6.4
Suffolk	Islip	46.2	23.4	21.1	14.2	9.5	7.0
Suffolk	Riverhead	45.0	23.5	20.2	13.5	8.9	6.4
Suffolk	Shelter Island	45.0	23.2	20.2	13.4	8.8	6.4
Suffolk	Smithtown	45.2	23.5	20.3	13.6	8.9	6.5
Suffolk	Southampton	45.0	23.6	20.3	13.5	8.9	6.4
Suffolk	Southold	45.2	23.5	20.3	13.6	8.9	6.5
Sullivan	Bethel	44.1	19.9	18.5	12.2	7.9	5.7
Sullivan	Callicoon	46.0	21.1	20.2	13.6	9.1	6.6
Sullivan	Cochecton	42.1	19.0	17.0	10.9	6.9	4.8
Sullivan	Delaware	42.6	19.0	17.3	11.2	7.1	5.0
Sullivan	Fallsburg	47.0	21.8	21.1	14.3	9.6	7.1
Sullivan	Forestburgh	46.1	21.2	20.3	13.7	9.1	6.7
Sullivan	Fremont	44.2	20.3	18.7	12.4	8.0	5.8
Sullivan	Highland	42.6	19.1	17.3	11.2	7.1	5.0
Sullivan	Liberty	47.9	22.0	21.7	14.9	10.1	7.5
Sullivan	Lumberland	43.8	19.7	18.3	12.0	7.8	5.5
Sullivan	Mamakating	45.2	20.8	19.6	13.0	8.6	6.2
Sullivan	Neversink	48.5	22.2	22.2	15.3	10.5	7.9
Sullivan	Rockland	46.3	21.0	20.3	13.7	9.2	6.7
Sullivan	Thompson	46.5	21.4	20.6	13.9	9.3	6.9
Sullivan	Tusten	41.4	19.0	16.6	10.6	6.6	4.5

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Tioga	Barton	36.3	16.1	12.6	7.4	4.1	2.5
Tioga	Berkshire	37.1	16.5	13.1	7.8	4.5	2.8
Tioga	Candor	37.1	16.5	13.2	7.9	4.5	2.8
Tioga	Newark Valley	37.0	16.4	13.1	7.8	4.4	2.8
Tioga	Nichols	35.0	15.0	11.5	6.6	3.5	2.1
Tioga	Owego	36.2	15.9	12.5	7.3	4.1	2.5
Tioga	Richford	38.8	17.3	14.4	8.8	5.2	3.4
Tioga	Spencer	37.2	16.5	13.2	7.9	4.5	2.8
Tioga	Tioga	36.0	15.9	12.3	7.2	4.0	2.4
Tompkins	Caroline	38.2	16.9	14.0	8.5	5.0	3.2
Tompkins	Danby	37.7	16.6	13.6	8.2	4.7	3.0
Tompkins	Dryden	37.6	16.0	13.3	8.0	4.6	2.9
Tompkins	Enfield	37.8	16.4	13.6	8.2	4.8	3.1
Tompkins	Groton	38.0	16.5	13.7	8.3	4.8	3.1
Tompkins	Ithaca	34.9	15.0	11.5	6.5	3.5	2.1
Tompkins	Lansing	34.8	14.7	11.3	6.4	3.4	2.0
Tompkins	Newfield	38.5	17.2	14.2	8.7	5.1	3.3
Tompkins	Ulysses	34.9	14.7	11.4	6.5	3.5	2.0
Ulster	Denning	53.1	25.3	26.3	18.8	13.4	10.4
Ulster	Esopus	45.4	21.6	19.9	13.3	8.8	6.4
Ulster	Gardiner	45.3	21.2	19.8	13.2	8.7	6.3
Ulster	Hardenburgh	46.9	21.6	20.9	14.2	9.6	7.0
Ulster	Hurley	47.0	22.1	21.1	14.4	9.7	7.1
Ulster	Kingston	46.1	21.9	20.5	13.8	9.2	6.7
Ulster	Lloyd	45.0	20.9	19.5	13.0	8.5	6.2
Ulster	Marbletown	46.7	21.9	20.9	14.2	9.5	7.0
Ulster	Marlborough	43.7	20.0	18.3	12.0	7.8	5.5
Ulster	New Paltz	45.5	21.5	20.0	13.4	8.9	6.4
Ulster	Olive	49.3	23.1	23.0	16.0	11.0	8.3
Ulster	Plattekill	45.8	21.3	20.2	13.5	9.0	6.6
Ulster	Rochester	46.9	21.8	21.0	14.2	9.6	7.1
Ulster	Rosendale	45.2	21.5	19.8	13.2	8.7	6.3
Ulster	Saugerties	43.6	20.3	18.3	12.0	7.7	5.5
Ulster	Shandaken	49.1	23.8	23.1	16.0	11.0	8.3
Ulster	Shawangunk	44.8	21.0	19.3	12.8	8.4	6.1
Ulster	Ulster	44.8	21.4	19.5	13.0	8.5	6.1
Ulster	Wawarsing	46.3	21.6	20.6	13.9	9.3	6.8
Ulster	Woodstock	48.4	22.5	22.2	15.3	10.5	7.9
Warren	Bolton	40.7	18.7	16.0	10.1	6.2	4.2

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Warren	Chester	41.1	19.0	16.4	10.4	6.5	4.4
Warren	Hague	40.6	18.5	15.9	10.0	6.2	4.2
Warren	Horicon	41.0	19.0	16.3	10.3	6.4	4.4
Warren	Johnsburg	44.1	20.5	18.7	12.3	8.0	5.7
Warren	Lake George	43.0	19.9	17.9	11.6	7.5	5.3
Warren	Lake Luzerne	42.9	20.0	17.8	11.6	7.4	5.2
Warren	Queensbury	39.9	18.3	15.4	9.6	5.8	3.9
Warren	Stony Creek	46.5	22.7	21.0	14.2	9.5	7.0
Warren	Thurman	45.4	21.5	19.9	13.3	8.8	6.4
Warren	Warrensburg	43.0	20.1	17.9	11.6	7.4	5.2
Washington	Argyle	38.5	17.0	14.2	8.6	5.1	3.3
Washington	Cambridge	37.3	16.0	13.2	7.9	4.5	2.9
Washington	Dresden	42.3	19.4	17.2	11.1	7.0	4.9
Washington	Easton	37.3	16.2	13.2	7.9	4.5	2.9
Washington	Fort Ann	40.8	18.6	16.1	10.2	6.3	4.3
Washington	Fort Edward	37.0	16.4	13.1	7.8	4.4	2.8
Washington	Granville	39.3	17.5	14.8	9.1	5.5	3.6
Washington	Greenwich	37.5	16.1	13.3	8.0	4.6	2.9
Washington	Hampton	39.2	17.2	14.6	9.0	5.4	3.6
Washington	Hartford	39.7	18.0	15.2	9.4	5.7	3.8
Washington	Hebron	38.9	17.0	14.4	8.9	5.3	3.5
Washington	Jackson	38.3	16.5	13.9	8.5	5.0	3.2
Washington	Kingsbury	38.0	17.3	13.9	8.4	4.9	3.1
Washington	Putnam	37.6	16.5	13.5	8.1	4.7	3.0
Washington	Salem	37.7	16.4	13.5	8.1	4.7	3.0
Washington	White Creek	39.6	17.3	14.9	9.2	5.6	3.7
Washington	Whitehall	38.0	17.0	13.8	8.4	4.9	3.1
Wayne	Arcadia	35.2	15.8	11.8	6.8	3.7	2.2
Wayne	Butler	37.3	17.1	13.5	8.0	4.6	2.9
Wayne	Galen	36.2	16.5	12.6	7.4	4.1	2.5
Wayne	Huron	38.8	18.2	14.7	9.0	5.3	3.5
Wayne	Lyons	35.6	16.0	12.1	7.0	3.8	2.3
Wayne	Macedon	33.7	15.0	10.8	6.0	3.1	1.7
Wayne	Marion	35.9	16.4	12.4	7.2	4.0	2.4
Wayne	Ontario	36.4	16.7	12.8	7.5	4.2	2.6
Wayne	Palmyra	35.0	15.6	11.7	6.6	3.6	2.1
Wayne	Rose	37.1	17.3	13.4	8.0	4.5	2.9
Wayne	Savannah	36.2	16.4	12.6	7.3	4.1	2.5
Wayne	Sodus	37.0	17.6	13.4	8.0	4.5	2.8

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Wayne	Walworth	35.1	16.2	11.9	6.8	3.7	2.2
Wayne	Williamson	37.0	17.3	13.3	7.9	4.5	2.8
Wayne	Wolcott	39.0	18.6	14.9	9.2	5.5	3.6
Westchester	Bedford	49.0	23.9	23.1	16.0	11.0	8.3
Westchester	Cortlandt	47.0	22.1	21.2	14.4	9.7	7.2
Westchester	Eastchester	47.0	22.1	21.2	14.4	9.7	7.2
Westchester	Greenburgh	48.8	23.5	22.8	15.7	10.8	8.1
Westchester	Harrison	47.8	23.2	22.0	15.1	10.2	7.6
Westchester	Lewisboro	49.4	24.2	23.4	16.3	11.2	8.5
Westchester	Mamaroneck	47.0	22.0	21.1	14.4	9.7	7.1
Westchester	Mount Pleasant	48.6	23.4	22.6	15.6	10.7	8.0
Westchester	Mount Vernon	47.0	22.0	21.1	14.4	9.7	7.1
Westchester	New Castle	48.9	23.9	23.0	15.9	10.9	8.2
Westchester	New Rochelle	47.0	22.0	21.1	14.4	9.7	7.1
Westchester	North Castle	49.0	24.0	23.1	16.0	11.0	8.3
Westchester	North Salem	48.9	23.8	23.0	15.9	10.9	8.2
Westchester	Ossining	47.3	22.8	21.6	14.7	9.9	7.4
Westchester	Pelham	47.0	22.0	21.1	14.4	9.7	7.1
Westchester	Pound Ridge	49.0	24.3	23.2	16.1	11.1	8.3
Westchester	Rye	47.6	23.2	21.9	14.9	10.1	7.5
Westchester	Scarsdale	47.0	22.4	21.2	14.4	9.7	7.2
Westchester	Somers	48.9	23.6	22.9	15.9	10.9	8.2
Westchester	White Plains	47.2	23.0	21.5	14.7	9.9	7.3
Westchester	Yonkers	47.3	22.4	21.4	14.6	9.9	7.3
Westchester	Yorktown	48.6	23.0	22.5	15.5	10.7	8.0
Wyoming	Arcade	42.2	18.4	16.9	10.9	6.9	4.8
Wyoming	Attica	38.4	17.0	14.1	8.6	5.0	3.3
Wyoming	Bennington	39.2	17.5	14.7	9.1	5.4	3.6
Wyoming	Castile	35.5	15.1	11.8	6.8	3.7	2.2
Wyoming	Covington	36.3	15.4	12.4	7.2	4.0	2.5
Wyoming	Eagle	40.6	17.9	15.7	9.9	6.1	4.1
Wyoming	Gainsville	39.4	17.5	14.9	9.2	5.5	3.7
Wyoming	Genesee Falls	35.3	14.9	11.7	6.7	3.7	2.2
Wyoming	Java	41.0	17.9	16.0	10.1	6.3	4.3
Wyoming	Middlebury	37.8	16.8	13.7	8.2	4.8	3.1
Wyoming	Orangeville	40.8	18.0	15.9	10.0	6.2	4.2
Wyoming	Perry	36.1	15.4	12.3	7.2	4.0	2.4
Wyoming	Pike	38.1	16.6	13.8	8.4	4.9	3.2
Wyoming	Sheldon	40.2	17.9	15.5	9.7	5.9	4.0

Appendix B: Township precipitation data and N leaching index - 4/13/2003.

County	Township	Precipitation		N Leaching Index			
		P _A	P _W	Soil Hydrologic Group			
		-----Inches-----		A	B	C	D
Wyoming	Warsaw	38.0	16.7	13.8	8.3	4.8	3.1
Wyoming	Wethersfield	41.6	18.6	16.5	10.6	6.6	4.5
Yates	Barrington	33.7	13.7	10.4	5.8	3.0	1.7
Yates	Benton	33.0	14.0	10.1	5.5	2.8	1.5
Yates	Italy	34.1	13.3	10.5	5.9	3.1	1.8
Yates	Jerusalem	33.1	13.2	10.0	5.4	2.7	1.5
Yates	Middlesex	33.0	13.2	9.9	5.4	2.7	1.5
Yates	Milo	33.0	13.7	10.0	5.5	2.7	1.5
Yates	Potter	33.0	13.7	10.0	5.4	2.7	1.5
Yates	Starkey	33.1	13.6	10.0	5.5	2.7	1.5
Yates	Torrey	33.0	14.0	10.1	5.5	2.8	1.5