Map Unit Description (MN)

Redwood County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

27A--Dickinson fine sandy loam, 0 to 2 percent slopes

Dickinson

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	fine sandy loam	moderately rapid	2.71 to 3.05 in	6.1 to 7.3
Bw -- 17 to 36 in	fine sandy loam	moderately rapid	2.83 to 3.21 in	6.1 to 7.3
C -- 36 to 60 in	sand	rapid	1.20 to 1.68 in	6.1 to 7.3

27B--Dickinson fine sandy loam, 2 to 6 percent slopes

Dickinson

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	fine sandy loam	moderately rapid	2.71 to 3.05 in	6.1 to 7.3
Bw -- 17 to 36 in	fine sandy loam	moderately rapid	2.83 to 3.21 in	6.1 to 7.3
C -- 36 to 60 in	sand	rapid	1.20 to 1.68 in	6.1 to 7.3

31E--Storden loam, 18 to 25 percent slopes

Storden

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 25 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	7.4 to 8.4
C1 -- 10 to 37 in	loam	moderate	4.62 to 5.16 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

31F--Storden loam, 25 to 40 percent slopes

Storden

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 40 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C1 -- 8 to 37 in	loam	moderate	4.95 to 5.54 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

39A--Wadena loam, 0 to 2 percent slopes

Wadena

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
Bw -- 13 to 29 in	loam	moderate	2.74 to 3.07 in	6.1 to 7.3
2C -- 29 to 60 in	stratified gravelly coarse sand to sand	rapid	0.61 to 1.23 in	6.6 to 8.4

39B--Wadena loam, 2 to 6 percent slopes

Wadena

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
Bw -- 13 to 29 in	loam	moderate	2.74 to 3.07 in	6.1 to 7.3
2C -- 29 to 60 in	stratified gravelly coarse sand to sand	rapid	0.61 to 1.23 in	6.6 to 8.4

41A--Estherville sandy loam, 0 to 2 percent slopes

Estherville

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.79 to 2.07 in	6.1 to 7.3
Bw -- 14 to 19 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

41B--Estherville sandy loam, 2 to 6 percent slopes

Estherville

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.79 to 2.07 in	6.1 to 7.3
Bw -- 14 to 19 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

42C--Salida gravelly sandy loam, 2 to 12 percent slopes

Salida

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 2 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 8 in	gravelly sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
C --	8 to 60 in	very gravelly sand	very rapid	2.60 to 3.64 in	7.4 to 8.4

42E--Salida gravelly sandy loam, 12 to 35 percent slopes

Salida

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 12 to 35 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .10
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 8 in	gravelly sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
C --	8 to 60 in	very gravelly sand	very rapid	2.60 to 3.64 in	7.4 to 8.4

86--Canisteo clay loam

Canisteo

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	clay loam	moderate	3.08 to 3.44 in	7.4 to 8.4
AB,Bg -- 18 to 29 in	clay loam	moderate	1.65 to 2.09 in	7.4 to 8.4
C -- 29 to 60 in	loam	moderate	5.22 to 5.83 in	7.4 to 8.4

94B--Terril loam, 2 to 6 percent slopes

Terril

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material: colluvium
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1 -- 0 to 24 in	loam	moderate	4.80 to 5.28 in	6.1 to 7.3
A2 -- 24 to 34 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
Bw -- 34 to 60 in	loam	moderate	4.42 to 4.94 in	6.1 to 7.3

94C--Terril loam, 6 to 12 percent slopes

Terril

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: colluvium
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1 -- 0 to 24 in	loam	moderate	4.80 to 5.28 in	6.1 to 7.3
A2 -- 24 to 34 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
Bw -- 34 to 60 in	loam	moderate	4.42 to 4.94 in	6.1 to 7.3

128A--Grogan loam, 0 to 2 percent slopes

Grogan

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 15 in	loam	moderately rapid	2.99 to 3.29 in	6.1 to 7.3
Bw,BC -- 15 to 34 in	very fine sandy loam	moderately rapid	3.21 to 3.59 in	6.1 to 7.3
C -- 34 to 60 in	stratified loamy very fine sand to silt loam	moderately rapid	4.42 to 4.94 in	7.4 to 8.4

128B--Grogan loam, 2 to 6 percent slopes

Grogan

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 15 in	loam	moderately rapid	2.99 to 3.29 in	6.1 to 7.3
Bw,Bc -- 15 to 34 in	very fine sandy loam	moderately rapid	3.21 to 3.59 in	6.1 to 7.3
C -- 34 to 60 in	stratified loamy very fine sand to silt loam	moderately rapid	4.42 to 4.94 in	7.4 to 8.4

227--Lemond loam

Lemond

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 12 in	loam	moderately rapid	2.36 to 2.60 in	7.4 to 8.4
Bg -- 12 to 32 in	sandy loam	moderately rapid	2.41 to 2.81 in	7.4 to 8.4
2Cg -- 32 to 60 in	loamy sand	rapid	2.24 to 2.80 in	7.4 to 8.4

247--Linder loam

Linder

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loam	moderate	3.62 to 3.98 in	6.1 to 7.3
Bw,Bg -- 18 to 28 in	sandy loam	moderately rapid	1.18 to 1.38 in	6.1 to 7.3
2Cg -- 28 to 60 in	gravelly loamy coarse sand	very rapid	0.64 to 1.28 in	7.4 to 8.4

255--Mayer loam

Mayer

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 22 in	loam	moderate	4.41 to 4.85 in	7.4 to 8.4
Bg -- 22 to 32 in	silt loam	moderate	1.97 to 2.17 in	7.4 to 8.4
2Cg -- 32 to 60 in	gravelly coarse sand	rapid	0.56 to 1.12 in	7.4 to 8.4

282--Hanska fine sandy loam

Hanska

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	fine sandy loam	moderately rapid	2.90 to 3.26 in	6.1 to 7.3
Bg -- 18 to 38 in	sandy loam	moderately rapid	2.36 to 2.76 in	6.1 to 7.3
2Cg -- 38 to 60 in	sand	rapid	1.10 to 1.54 in	6.6 to 7.8

313--Spillville loam, occasionally flooded

Spillville, occasionally flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 48 in	loam	moderate	9.61 to 10.57 in	6.1 to 7.3
C -- 48 to 60 in	loam	moderately rapid	2.01 to 2.24 in	6.1 to 7.3

317--Oshawa silty clay loam

Oshawa, frequently flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .28
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 39 in	silty clay loam	moderately slow	7.02 to 8.57 in	7.4 to 7.8
Cg -- 39 to 60 in	silty clay loam	moderately slow	3.34 to 3.96 in	7.4 to 7.8

321--Tilfer clay loam

Tilfer, occasionally flooded

Extent: 85 percent of the unit
Landform(s): flats on benches
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): lithic bedrock at 20 to 40 inches
Flooding: occasional
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 19 in	clay loam	moderate	3.21 to 3.59 in	7.4 to 8.4
Bg -- 19 to 32 in	loam	moderate	2.21 to 2.47 in	7.4 to 8.4
R -- 32 to 36 in	unweathered bedrock	very slow		

327A--Dickman sandy loam, 0 to 2 percent slopes

Dickman

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	6.1 to 6.5
Bw -- 12 to 33 in	sandy loam	moderately rapid	2.55 to 2.98 in	6.1 to 7.3
C -- 33 to 60 in	fine sand	rapid	1.34 to 1.87 in	6.1 to 7.8

327B--Dickman sandy loam, 2 to 6 percent slopes

Dickman

Extent: 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	6.1 to 7.3
Bw -- 12 to 33 in	sandy loam	moderately rapid	2.55 to 2.98 in	6.1 to 7.3
C -- 33 to 60 in	fine sand	rapid	1.34 to 1.87 in	6.1 to 7.8

392--Biscay loam

Biscay

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,A2 -- 0 to 22 in	loam	moderate	4.41 to 4.85 in	6.1 to 7.3
Bg -- 22 to 30 in	loam	moderate	1.34 to 1.50 in	6.6 to 7.3
BCg -- 30 to 33 in	sandy loam	moderately rapid	0.35 to 0.41 in	7.4 to 8.4
2Cg -- 33 to 60 in	stratified gravelly coarse sand to loamy sand	rapid	0.54 to 1.07 in	7.4 to 8.4

399--Biscay loam, depressional

Biscay, depressional

Extent: 85 percent of the unit
Landform(s): depressions
Slope gradient: 0 to 1 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 31 in	loam	moderate	6.22 to 6.84 in	6.1 to 7.3
Bg -- 31 to 35 in	sandy loam	moderately rapid	0.47 to 0.55 in	6.6 to 7.3
2Cg -- 35 to 60 in	stratified gravelly coarse sand to loamy sand	rapid	0.50 to 0.99 in	7.4 to 8.4

421B--Ves loam, 1 to 4 percent slopes

Ves

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 4 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
Bw -- 10 to 25 in	loam	moderate	2.61 to 2.92 in	6.1 to 7.3
Bk -- 25 to 39 in	loam	moderate	2.34 to 2.62 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

421B2--Ves loam, 3 to 6 percent slopes, eroded

Ves, eroded

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 25 in	loam	moderate	2.61 to 2.92 in	6.6 to 7.8
Bk -- 25 to 39 in	loam	moderate	2.34 to 2.62 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

423--Seaforth loam

Seaforth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	7.4 to 8.4
Bk -- 15 to 21 in	clay loam	moderate	0.89 to 1.12 in	7.4 to 8.4
C -- 21 to 60 in	loam	moderate	6.63 to 7.41 in	7.4 to 8.4

562--Knoke silty clay loam

Knoke

Extent: 85 percent of the unit
Landform(s): depressions
Slope gradient: 0 to 1 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1 -- 0 to 15 in	silty clay loam	moderately slow	2.69 to 3.29 in	7.4 to 8.4
A2,Bg -- 15 to 60 in	clay loam	moderately slow	7.63 to 8.53 in	7.4 to 8.4

574--Du Page loam

Du Page, occasionally flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 32 in	loam	moderate	6.38 to 7.02 in	7.4 to 8.4
C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

575--Nishna clay loam

Nishna, occasionally flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 45 in	silty clay loam	very slow	8.08 to 9.87 in	7.4 to 8.4
Cg -- 45 to 60 in	silty clay	very slow	1.65 to 2.24 in	7.4 to 8.4

654--Revere clay loam

Revere

Extent: 85 percent of the unit
Landform(s): flats
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,Ay -- 0 to 15 in	clay loam	moderate	2.54 to 2.84 in	7.4 to 8.4
Byg -- 15 to 35 in	clay loam	moderate	3.01 to 3.81 in	7.4 to 8.4
Cyg,Cg -- 35 to 60 in	loam	moderate	4.22 to 4.71 in	7.4 to 8.4

818--Lemond-Linder-Estherville complex

Lemond

Extent: 45 percent of the unit
Landform(s): beaches
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	gravelly sandy loam	moderately rapid	2.20 to 2.54 in	7.4 to 7.8
Bg1 -- 17 to 28 in	sandy loam	moderately rapid	1.32 to 1.54 in	7.4 to 7.8
Bg2 -- 28 to 44 in	loamy sand	rapid	1.45 to 1.78 in	7.4 to 8.4
Cg -- 44 to 60 in	sandy loam	moderate	1.73 to 2.05 in	7.4 to 8.4

Linder

Extent: 25 percent of the unit
Landform(s): beaches
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	sandy loam	moderate	2.35 to 2.72 in	6.1 to 7.3
Bw,Bg -- 18 to 28 in	sandy loam	moderately rapid	1.18 to 1.38 in	6.1 to 7.3
2Cg -- 28 to 60 in	gravelly loamy coarse sand	very rapid	2.55 to 3.19 in	7.4 to 8.4

818--Lemond-Linder-Estherville complex

Estherville

Extent: 25 percent of the unit
Landform(s): beaches
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.79 to 2.07 in	6.1 to 7.3
Bw -- 14 to 19 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

884--Delft-Webster complex

Delft

Extent: 50 percent of the unit
Landform(s): swales
Slope gradient: 1 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
A1,AB -- 10 to 28 in	clay loam	moderate	3.62 to 3.98 in	6.1 to 7.3
Bg -- 28 to 47 in	loam	moderate	3.21 to 3.59 in	6.6 to 7.8
Cg -- 47 to 60 in	loam	moderate	2.21 to 2.47 in	7.4 to 8.4

Webster

Extent: 45 percent of the unit
Landform(s): swales
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 20 in	clay loam	moderate	3.41 to 3.81 in	6.6 to 7.3
Bg -- 20 to 49 in	clay loam	moderate	4.31 to 5.46 in	6.6 to 7.3
Cg -- 49 to 60 in	loam	moderate	1.87 to 2.09 in	7.4 to 8.4

954B2--Ves-Storden loams, 3 to 6 percent slopes, eroded

Ves, eroded

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 24 in	loam	moderate	2.41 to 2.69 in	6.6 to 7.8
Bk -- 24 to 39 in	loam	moderate	2.54 to 2.84 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

Storden, eroded

Extent: 35 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C1 -- 8 to 37 in	loam	moderate	4.95 to 5.54 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

954C2--Storden-Ves loams, 6 to 12 percent slopes, eroded

Storden, eroded

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C1 -- 8 to 37 in	loam	moderate	4.95 to 5.54 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

Ves, eroded

Extent: 25 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 24 in	loam	moderate	2.41 to 2.69 in	6.6 to 7.8
Bk -- 24 to 39 in	loam	moderate	2.54 to 2.84 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

954D2--Storden-Ves loams, 12 to 18 percent slopes, eroded

Storden, eroded

Extent: 60 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C1 -- 8 to 37 in	loam	moderate	4.95 to 5.54 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

Ves, eroded

Extent: 20 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 24 in	loam	moderate	2.41 to 2.69 in	6.6 to 7.8
Bk -- 24 to 39 in	loam	moderate	2.54 to 2.84 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

992E--Rock outcrop-Copaston complex, 2 to 40 percent slopes

Rock outcrop

Extent: 50 percent of the unit
Landform(s): terraces
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

Copaston

Extent: 35 percent of the unit
Landform(s): terraces
Slope gradient: 2 to 40 percent
Parent material: alluvium
Restrictive feature(s): lithic bedrock at 12 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A,AB --	0 to 14 in	sandy loam	moderate	1.84 to 2.13 in	6.1 to 7.3
Bw --	14 to 18 in	sandy loam	moderately rapid	0.47 to 0.55 in	6.1 to 7.8
R --	18 to 22 in	unweathered bedrock	very slow		

999B2--Ves-Estherville-Storden complex, 3 to 6 percent slopes, eroded

Ves, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 22 in	loam	moderate	2.07 to 2.32 in	6.6 to 7.8
Bk -- 22 to 39 in	loam	moderate	2.88 to 3.22 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

Estherville, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.79 to 2.07 in	6.1 to 7.3
Bw -- 14 to 19 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

999B2--Ves-Estherville-Storden complex, 3 to 6 percent slopes, eroded

Storden, eroded

Extent: 20 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 11 in	loam	moderate	2.20 to 2.43 in	7.4 to 8.4
C1 --	11 to 37 in	loam	moderate	4.42 to 4.94 in	7.4 to 8.4
C2 --	37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

999C2--Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded

Storden, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loam	moderate	2.20 to 2.43 in	7.4 to 8.4
C1 -- 11 to 37 in	loam	moderate	4.42 to 4.94 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

Estherville, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderately rapid	1.97 to 2.17 in	6.1 to 7.3
Bw -- 10 to 19 in	sandy loam	moderately rapid	1.09 to 1.27 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

999C2--Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded

Ves, eroded

Extent: 20 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 22 in	loam	moderate	2.07 to 2.32 in	6.6 to 7.8
Bk -- 22 to 39 in	loam	moderate	2.88 to 3.22 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

999D2--Storden-Estherville-Ves complex, 12 to 18 percent slopes, eroded

Storden, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loam	moderate	2.20 to 2.43 in	7.4 to 8.4
C1 -- 11 to 37 in	loam	moderate	4.42 to 4.94 in	7.4 to 8.4
C2 -- 37 to 60 in	loam	moderate	3.88 to 4.34 in	7.4 to 8.4

Estherville, eroded

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 7.3
Bw -- 10 to 19 in	sandy loam	moderately rapid	1.09 to 1.27 in	6.1 to 7.3
2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

999D2--Storden-Estherville-Ves complex, 12 to 18 percent slopes, eroded

Ves, eroded

Extent: 15 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.8
Bw -- 10 to 22 in	loam	moderate	2.07 to 2.32 in	6.6 to 7.8
Bk -- 22 to 39 in	loam	moderate	2.88 to 3.22 in	7.4 to 8.4
C -- 39 to 60 in	loam	moderate	3.55 to 3.96 in	7.4 to 8.4

1003B--Udorthents, (cut, and Fill land), 0 to 6 percent slopes

Udorthents, loamy (cut and fill land)

Extent: 100 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: variable loamy material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group: B
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1016--Udorthents, loamy

Udorthents, loamy

Extent: 100 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: variable soil material
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group: B
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

1024A--Havelock clay loam, 0 to 2 percent slopes. occasionally flooded

Havelock, occasionally flooded

Extent: 75 to 85 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap,A1,A2 --	0 to 32 in	clay loam	moderate	5.42 to 7.33 in	7.4 to 8.4
Cg --	32 to 60 in	clay loam	moderate	4.75 to 5.59 in	7.4 to 8.4

1029--Pits, gravel

Pits, gravel

Extent: 100 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient:
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1053--Aquolls, ponded

Aquolls, ponded

Extent: 100 percent of the unit
Landform(s): depressions
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1056A--Spillville loam, 0 to 2 percent slopes. frequently flooded

Spillville, frequently flooded

Extent: 80 to 95 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 5w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 -- 0 to 30 in	loam	moderate	5.98 to 6.58 in	6.1 to 7.3
AC -- 30 to 50 in	fine sandy loam	moderately rapid	2.21 to 2.61 in	6.1 to 7.3
C -- 50 to 60 in	fine sandy loam	moderately rapid	1.08 to 1.28 in	6.1 to 7.8

1833--Coland clay loam, occasionally flooded

Coland, occasionally flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap, -- 0 to 10 in	clay loam	moderate	1.67 to 1.87 in	6.1 to 7.3
A -- 10 to 39 in	clay loam	moderate	4.95 to 5.54 in	6.1 to 7.3
Cg -- 39 to 60 in	loam	moderately rapid	3.55 to 3.96 in	7.4 to 7.8

1834--Coland clay loam, frequently flooded

Coland, frequently flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderate	1.67 to 1.87 in	6.1 to 7.3
A -- 10 to 39 in	clay loam	moderate	4.95 to 5.54 in	6.1 to 7.3
Cg -- 39 to 60 in	loam	moderately rapid	3.55 to 3.96 in	7.4 to 7.8

1850--Oshawa variant stony clay loam

Oshawa, variant

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 1 to 3 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .28
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 13 in	stony clay loam	moderately slow	2.21 to 2.47 in	7.4 to 8.4
A2,A3 -- 13 to 42 in	clay loam	moderately slow	4.95 to 5.54 in	7.4 to 8.4
Cg -- 42 to 60 in	silty clay loam	moderately slow	2.83 to 3.37 in	7.4 to 8.4

1851B--Blue Earth mucky clay loam, sloping

Blue Earth, sloping

Extent: 85 percent of the unit
Landform(s): swales
Slope gradient: 1 to 3 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 10 in	mucky clay loam	moderately slow	1.77 to 2.36 in	7.4 to 8.4
Cg --	10 to 52 in	mucky clay loam	moderately slow	7.58 to 10.11 in	7.4 to 8.4
2Cg --	52 to 60 in	clay loam	moderately slow	1.10 to 1.26 in	7.4 to 8.4

1852F--Terril-Swanlake loams, 25 to 70 percent slopes

Terril

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 60 percent
Parent material: colluvium
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,A1 -- 0 to 24 in	loam	moderate	4.80 to 5.28 in	6.1 to 7.3
A2 -- 24 to 36 in	loam	moderate	2.36 to 2.60 in	6.1 to 7.3
Bw -- 36 to 60 in	loam	moderate	4.08 to 4.56 in	6.1 to 7.3

Swanlake

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 70 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
Bk1 -- 9 to 17 in	loam	moderate	1.34 to 1.50 in	7.4 to 8.4
Bk2,C -- 17 to 60 in	loam	moderate	7.30 to 8.15 in	7.4 to 8.4

1853A--Wadena variant loam, 0 to 2 percent slopes

Wadena, variant

Extent: 90 percent of the unit
Landform(s): terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loam	moderately rapid	2.20 to 2.43 in	6.6 to 7.3
Bw -- 11 to 18 in	loam	moderate	1.20 to 1.35 in	6.6 to 7.3
C -- 18 to 32 in	loam	moderately rapid	2.34 to 2.62 in	7.4 to 7.8
R -- 32 to 36 in	weathered bedrock	very slow		

1853B--Wadena variant loam, 2 to 6 percent slopes

Wadena, variant

Extent: 90 percent of the unit
Landform(s): terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 11 in	loam	moderately rapid	2.20 to 2.43 in	6.6 to 7.3
Bw --	11 to 18 in	loam	moderate	1.20 to 1.35 in	6.6 to 7.3
C --	18 to 32 in	loam	moderately rapid	2.34 to 2.62 in	7.4 to 7.8
R --	32 to 36 in	weathered bedrock	very slow		

1897--Seaforth-Wilmonton clay loams

Seaforth

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 12 in	loam	moderate	2.36 to 2.60 in	7.4 to 8.4
Bk -- 12 to 30 in	loam	moderate	3.08 to 3.44 in	7.4 to 8.4
C -- 30 to 60 in	loam	moderate	5.09 to 5.69 in	7.4 to 8.4

Wilmonton

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	clay loam	moderate	2.41 to 2.69 in	6.1 to 7.3
Bw -- 14 to 37 in	clay loam	moderately slow	3.43 to 4.34 in	6.1 to 7.3
2Bk,2C -- 37 to 60 in	clay loam	moderately slow	3.20 to 3.65 in	7.4 to 8.4

1899B--Wilmonton variant loam, 2 to 12 percent slopes

Wilmonton, variant

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 19 in	loam	moderate	3.78 to 4.16 in	6.6 to 7.3
2Bt -- 19 to 41 in	clay	very slow	2.20 to 3.09 in	6.6 to 7.3
2Cg -- 41 to 60 in	clay	very slow	1.70 to 2.46 in	7.4 to 8.4

1899E--Wilmonton variant sandy clay loam, 12 to 40 percent slopes

Wilmonton, variant

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 40 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	sandy clay loam	moderate	1.63 to 1.81 in	6.6 to 7.3
2Bt -- 9 to 29 in	clay	very slow	2.01 to 2.81 in	6.6 to 7.3
2Cg -- 29 to 60 in	clay	very slow	2.76 to 3.99 in	7.4 to 8.4

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 50 to 100 percent of the unit
Landform(s):
Slope gradient:
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

L83A--Webster clay loam, 0 to 2 percent slopes

Webster

Extent: 50 to 85 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 19 in	clay loam	moderate	3.59 to 3.97 in	6.6 to 7.3
Bg --	19 to 26 in	clay loam	moderate	1.13 to 1.28 in	6.6 to 7.8
BCg,Cg --	26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 8.4

L84A--Glencoe clay loam, depressional, 0 to 1 percent slopes

Glencoe, depressional

Extent: 75 to 100 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 24 in	clay loam	moderate	4.32 to 5.28 in	6.1 to 7.8
ABg -- 24 to 35 in	clay loam	moderate	1.98 to 2.43 in	6.1 to 7.8
Bg -- 35 to 48 in	loam	moderate	1.95 to 2.47 in	6.6 to 7.8
Cg -- 48 to 60 in	loam	moderate	1.77 to 2.24 in	7.4 to 8.4

L141A--Spillville loam, 0 to 2 percent slopes, occasionally flooded

Spillville, occasionally flooded

Extent: 80 to 90 percent of the unit
Landform(s): flats on flood plains, rises on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 51 in	loam	moderate	9.72 to 10.75 in	5.6 to 7.3
C -- 51 to 60 in	loam	moderately rapid	1.30 to 1.56 in	5.6 to 7.3

L142A--Jeffers clay loam, 0 to 2 percent slopes

Jeffers

Extent: 80 to 95 percent of the unit
Landform(s): rims on depressions on moraines, flats on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 18 in	clay loam	moderate	3.08 to 3.44 in	7.4 to 8.4
Bg --	18 to 22 in	clay loam	moderate	0.59 to 0.75 in	7.9 to 8.4
Bkg,Bk --	22 to 35 in	clay loam	moderate	1.95 to 2.47 in	7.9 to 8.4
BC1,2 --	35 to 60 in	clay loam	moderately slow	3.47 to 3.97 in	7.4 to 8.4

L149A--Romnell clay loam, 0 to 3 percent slopes

Romnell

Extent: 80 to 95 percent of the unit
Landform(s): drainageways on moraines, swales on moraines
Slope gradient: 0 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	clay loam	moderate	3.08 to 4.35 in	6.6 to 7.8
Bg -- 18 to 27 in	clay loam	moderate	1.54 to 2.17 in	6.6 to 7.8
Btyg -- 27 to 33 in	clay loam	moderately slow	0.89 to 1.12 in	6.6 to 7.8
Bkg -- 33 to 43 in	clay loam	moderately slow	1.38 to 1.57 in	7.4 to 8.4
BCkg -- 43 to 60 in	clay loam	moderately slow	2.37 to 2.71 in	7.4 to 8.4

L163A--Okoboji silty clay loam, depressional, 0 to 1 percent slopes

Okoboji, depressional

Extent: 70 to 95 percent of the unit
Landform(s): depressions on lake plains, depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: lacustrine sediments over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 26 in	silty clay loam	moderately slow	5.46 to 5.98 in	6.1 to 7.8
Bg -- 26 to 42 in	silty clay	moderately slow	2.91 to 3.23 in	6.6 to 7.8
Cg -- 42 to 60 in	silty clay loam	moderately slow	3.19 to 3.54 in	6.6 to 8.4

L172D2--Storden, firm till-Annton complex, 12 to 18 percent slopes, moderately eroded

Storden, moderately eroded, firm till

Extent: 40 to 60 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk --	8 to 20 in	loam	moderate	2.07 to 2.32 in	7.9 to 8.4
BC --	20 to 80 in	clay loam	moderately slow	8.38 to 9.57 in	7.4 to 8.4

Annton, moderately, eroded

Extent: 20 to 45 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 8 in	clay loam	moderate	1.42 to 1.73 in	6.1 to 7.3
Bw --	8 to 26 in	clay loam	moderate	3.08 to 3.44 in	6.1 to 7.3
Bk --	26 to 60 in	loam	moderate	5.76 to 6.43 in	7.9 to 8.4
BC --	60 to 80 in	clay loam	moderately slow	2.81 to 3.21 in	7.4 to 8.4

L173A--Moines clay loam, 1 to 3 percent slopes

Moines

Extent: 80 to 95 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,ABy --	0 to 14 in	clay loam	moderate	2.41 to 2.69 in	7.4 to 8.4
Byg1,2,Bk --	14 to 40 in	loam	moderate	4.42 to 4.94 in	7.9 to 8.4
BCg --	40 to 60 in	clay loam	moderately slow	2.76 to 3.15 in	7.4 to 8.4

L198A--North Twin-Walnut grove complex, 0 to 2 percent slopes

North twin

Extent: 60 to 80 percent of the unit
Landform(s): hills on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderately slow	1.67 to 1.87 in	6.6 to 7.3
Bw -- 10 to 18 in	clay loam	moderately slow	1.16 to 1.49 in	6.1 to 7.3
Bk -- 18 to 31 in	clay loam	moderately slow	1.82 to 2.08 in	7.4 to 8.4
BCg,BC1,2 -- 31 to 80 in	clay loam	moderately slow	6.83 to 7.81 in	7.4 to 8.4

Walnut grove

Extent: 15 to 25 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	clay loam	moderately slow	2.41 to 2.69 in	6.6 to 7.3
Bw -- 14 to 28 in	clay loam	moderate	2.48 to 3.31 in	6.1 to 7.3
Bk -- 28 to 39 in	clay loam	moderately slow	1.54 to 1.76 in	7.4 to 8.4
BC1,2 -- 39 to 80 in	clay loam	moderately slow	5.73 to 6.55 in	7.4 to 8.4

L198B--North Twin-Walnut grove complex, 1 to 4 percent slopes

North twin

Extent: 50 to 70 percent of the unit
Landform(s): hills on moraines
Slope gradient: 1 to 4 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderately slow	1.67 to 1.87 in	6.6 to 7.3
Bw -- 10 to 18 in	clay loam	moderately slow	1.16 to 1.49 in	6.1 to 7.3
Bk -- 18 to 31 in	clay loam	moderately slow	1.82 to 2.08 in	7.4 to 8.4
BCg,BC1,2 -- 31 to 80 in	clay loam	moderately slow	6.83 to 7.81 in	7.4 to 8.4

Walnut grove

Extent: 15 to 35 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	clay loam	moderately slow	2.41 to 2.69 in	6.6 to 7.3
Bw -- 14 to 28 in	clay loam	moderate	2.48 to 3.31 in	6.1 to 7.3
Bk -- 28 to 39 in	clay loam	moderately slow	1.54 to 1.76 in	7.4 to 8.4
BC1,2 -- 39 to 80 in	clay loam	moderately slow	5.73 to 6.55 in	7.4 to 8.4

L201A--Normania loam, 0 to 3 percent slopes

Normania

Extent: 75 to 90 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 0 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A,AB -- 0 to 17 in	loam	moderate	3.39 to 3.72 in	6.1 to 7.3
Bw -- 17 to 26 in	loam	moderate	1.36 to 1.72 in	6.6 to 7.3
Bk -- 26 to 50 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4
Cg -- 50 to 60 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4

L202A--Pell Creek-Romnell complex, 0 to 2 percent slopes

Pell creek

Extent: 35 to 70 percent of the unit
Landform(s): drainageways on moraines, flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A,AB -- 0 to 20 in	clay loam	moderate	3.41 to 3.81 in	6.1 to 7.3
Bg -- 20 to 34 in	clay loam	moderate	2.07 to 2.62 in	7.4 to 8.4
BCg,BC1,2 -- 34 to 80 in	clay loam	moderately slow	6.45 to 7.37 in	7.4 to 8.4

Romnell

Extent: 15 to 45 percent of the unit
Landform(s): drainageways on moraines, swales on moraines
Slope gradient: 0 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	clay loam	moderate	3.08 to 4.35 in	6.6 to 7.8
Bg -- 18 to 27 in	clay loam	moderate	1.54 to 2.17 in	6.6 to 7.8
Btyg -- 27 to 33 in	clay loam	moderately slow	0.89 to 1.12 in	6.6 to 7.8
Bkg -- 33 to 43 in	clay loam	moderately slow	1.38 to 1.57 in	7.4 to 8.4
BCkg -- 43 to 60 in	clay loam	moderately slow	2.37 to 2.71 in	7.4 to 8.4

L207E--Belview-Ridgeton complex, 18 to 25 percent slopes, firm till substratum

Belview, firm till substratum

Extent: 65 to 85 percent of the unit
Landform(s): escarpments on moraines
Slope gradient: 18 to 25 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk -- 8 to 48 in	loam	moderate	6.02 to 7.63 in	7.4 to 8.4
BC1,2 -- 48 to 80 in	clay loam	moderately slow	4.46 to 5.10 in	7.4 to 8.4

Ridgeton, firm till substratum

Extent: 10 to 20 percent of the unit
Landform(s): escarpments on moraines
Slope gradient: 18 to 25 percent
Parent material: colluvium over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2,AB -- 0 to 31 in	loam	moderate	6.22 to 6.84 in	6.1 to 7.3
BA -- 31 to 49 in	loam	moderate	3.54 to 3.90 in	6.1 to 7.3
Bw -- 49 to 64 in	clay loam	moderate	2.46 to 2.76 in	6.1 to 7.3
BC -- 64 to 80 in	clay loam	moderately slow	2.20 to 2.52 in	7.4 to 8.4

L207F--Belview-Ridgeton complex, 18 to 40 percent slopes, firm till substratum

Belview, firm till substratum

Extent: 65 to 85 percent of the unit
Landform(s): escarpments on moraines
Slope gradient: 18 to 40 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk --	8 to 48 in	loam	moderate	6.02 to 7.63 in	7.4 to 8.4
BC1,2 --	48 to 80 in	clay loam	moderately slow	4.46 to 5.10 in	7.4 to 8.4

Ridgeton, firm till substratum

Extent: 10 to 20 percent of the unit
Landform(s): escarpments on moraines
Slope gradient: 18 to 35 percent
Parent material: colluvium over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2,AB --	0 to 31 in	loam	moderate	6.22 to 6.84 in	6.1 to 7.3
BA --	31 to 49 in	loam	moderate	3.54 to 3.90 in	6.1 to 7.3
Bw --	49 to 64 in	clay loam	moderate	2.46 to 2.76 in	6.1 to 7.3
BC --	64 to 80 in	clay loam	moderately slow	2.20 to 2.52 in	7.4 to 8.4

L214A--Calco-Du Page complex, 0 to 2 percent slopes, frequently flooded

Calco, frequently flooded

Extent: 40 to 70 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1 -- 0 to 14 in	silty clay loam	moderate	2.98 to 3.26 in	7.4 to 8.4
A2 -- 14 to 40 in	silty clay loam	moderate	5.46 to 5.98 in	7.4 to 8.4
Cg -- 40 to 60 in	silty clay loam	moderate	3.54 to 3.94 in	7.4 to 8.4

Du Page, frequently flooded

Extent: 40 to 60 percent of the unit
Landform(s): flats on flood plains, rises on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 5w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 -- 0 to 36 in	loam	moderate	7.17 to 7.88 in	6.6 to 8.4
C1,C2 -- 36 to 60 in	loam	moderate	4.08 to 4.56 in	7.4 to 8.4

L219A--Coland clay loam, 0 to 2 percent slopes, occasionally flooded

Coland, occasionally flooded

Extent: 65 to 90 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,2,3,AB	0 to 55 in	clay loam	moderate	11.02 to 12.13 in	6.1 to 7.3
Cg	55 to 60 in	clay loam	moderate	0.94 to 1.04 in	6.1 to 7.3

L221A--Du Page loam, 0 to 2 percent slopes, occasionally flooded

Du Page, occasionally flooded

Extent: 75 to 90 percent of the unit
Landform(s): flats on flood plains, rises on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,A2	0 to 36 in	loam	moderate	7.17 to 7.88 in	6.6 to 8.4
C1,C2	36 to 60 in	loam	moderate	4.08 to 4.56 in	7.4 to 8.4

L224A--Coland clay loam, 0 to 2 percent slopes, frequently flooded

Coland, frequently flooded

Extent: 65 to 90 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
A --	0 to 42 in	clay loam	moderate	8.43 to 9.27 in	6.1 to 7.3
C --	42 to 60 in	clay loam	moderate	3.54 to 3.90 in	6.1 to 7.3

L225B--Annton-North Twin complex, 3 to 6 percent slopes

Annton

Extent: 40 to 55 percent of the unit
Landform(s): hills on moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	6.1 to 7.3
Bw -- 10 to 22 in	clay loam	moderate	2.07 to 2.32 in	6.1 to 7.3
Bk -- 22 to 60 in	loam	moderately slow	5.29 to 6.05 in	7.4 to 8.4
BC -- 60 to 80 in	clay loam	moderately slow	2.81 to 3.21 in	7.4 to 8.4

North twin

Extent: 15 to 45 percent of the unit
Landform(s): hills on moraines
Slope gradient: 1 to 4 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderately slow	1.67 to 1.87 in	6.6 to 7.3
Bw -- 10 to 18 in	clay loam	moderately slow	1.16 to 1.49 in	6.1 to 7.3
Bk -- 18 to 31 in	clay loam	moderately slow	1.82 to 2.08 in	7.4 to 8.4
BCg,BC1,2 -- 31 to 80 in	clay loam	moderately slow	6.83 to 7.81 in	7.4 to 8.4

L226C2--Annton-Storden, firm till complex, 6 to 12 percent slopes, moderately eroded

Annton, moderately eroded

Extent: 30 to 60 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	clay loam	moderate	1.42 to 1.73 in	6.1 to 7.3
Bw -- 8 to 21 in	clay loam	moderate	2.21 to 2.47 in	6.1 to 7.3
Bk -- 21 to 34 in	clay loam	moderately slow	1.82 to 2.08 in	7.4 to 8.4
BC1,2 -- 34 to 80 in	clay loam	moderately slow	6.45 to 7.37 in	7.4 to 8.4

Storden, moderately eroded, firm till

Extent: 25 to 50 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	7.4 to 8.4
Bk -- 10 to 31 in	clay loam	moderately slow	2.98 to 3.40 in	7.4 to 8.4
BC -- 31 to 80 in	clay loam	moderately slow	6.83 to 7.81 in	7.4 to 8.4

L229A--Romnell silty clay loam, depressional, 0 to 1 percent slopes

Romnell, depressional

Extent: 75 to 95 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap,A	-- 0 to 23 in	silty clay loam	moderately slow	4.80 to 5.25 in	6.1 to 7.8
Bg1,2	-- 23 to 43 in	silty clay loam	moderate	3.41 to 4.82 in	6.6 to 7.8
BCg1	-- 43 to 51 in	clay loam	moderately slow	1.24 to 1.57 in	6.6 to 7.8
BCg2	-- 51 to 80 in	clay loam	moderately slow	4.02 to 4.60 in	7.4 to 8.4

L241B--Dickinson fine sandy loam, firm till substratum, 1 to 6 percent slopes

Dickinson, firm till substratum

Extent: 70 to 90 percent of the unit
Landform(s): hills on moraines, hills on outwash plains
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap,AB	-- 0 to 16 in	fine sandy loam	moderately rapid	1.94 to 2.42 in	5.6 to 7.3
Bw	-- 16 to 30 in	fine sandy loam	moderately rapid	1.65 to 2.07 in	5.1 to 6.5
C1	-- 30 to 47 in	loamy sand	rapid	0.34 to 0.68 in	5.6 to 7.8
C2	-- 47 to 60 in	sand	rapid	0.26 to 0.52 in	5.6 to 7.8
2BC	-- 60 to 80 in	clay loam	moderately slow	2.81 to 3.21 in	7.4 to 8.4

L242B--Terril loam, firm till substratum, 2 to 6 percent slopes

Terril, firm till substratum

Extent: 80 to 95 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: colluvium over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,A2 -- 0 to 30 in	loam	moderate	5.98 to 6.58 in	6.1 to 7.3
A3,AB -- 30 to 40 in	loam	moderate	1.74 to 1.94 in	6.1 to 7.3
Bw -- 40 to 61 in	loam	moderate	3.34 to 3.76 in	6.1 to 7.3
BC -- 61 to 80 in	clay loam	moderately slow	2.65 to 3.02 in	7.4 to 8.4

L243A--Havelock-Zumbro complex, 0 to 3 percent slopes, frequently flooded

Havelock, frequently flooded

Extent: 50 to 85 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 --	0 to 32 in	loam	moderate	5.42 to 7.33 in	7.4 to 8.4
Cg --	32 to 60 in	clay loam	moderate	4.75 to 5.59 in	7.4 to 8.4

Zumbro, frequently flooded

Extent: 10 to 20 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.77 in	6.1 to 7.8
AB --	10 to 42 in	loamy fine sand	rapid	2.58 to 3.23 in	6.1 to 7.8
C --	42 to 60 in	fine sand	rapid	0.35 to 1.24 in	7.4 to 7.8

L244A--Du Page-Zumbro complex, 0 to 3 percent slopes, occasionally flooded

Du Page, occasionally flooded

Extent: 50 to 80 percent of the unit
Landform(s): flats on flood plains, rises on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,A2 -- 0 to 36 in	loam	moderate	7.17 to 7.88 in	6.6 to 8.4
C1,C2 -- 36 to 60 in	loam	moderate	4.08 to 4.56 in	7.4 to 8.4

Havelock, occasionally flooded

Extent: 15 to 25 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A1,A2 -- 0 to 32 in	clay loam	moderate	5.42 to 7.33 in	7.4 to 8.4
Cg -- 32 to 60 in	clay loam	moderate	4.75 to 5.59 in	7.4 to 8.4

L247A--Moines-Walnut grove complex, 1 to 3 percent slopes

Moines

Extent: 35 to 60 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,ABy --	0 to 14 in	clay loam	moderate	2.41 to 2.69 in	7.4 to 8.4
Byg1,2,Bk --	14 to 40 in	loam	moderate	4.42 to 4.94 in	7.9 to 8.4
BCg --	40 to 60 in	clay loam	moderately slow	2.76 to 3.15 in	7.4 to 8.4

Walnut grove

Extent: 20 to 40 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 14 in	clay loam	moderately slow	2.41 to 2.69 in	6.6 to 7.3
Bw --	14 to 28 in	clay loam	moderate	2.48 to 3.31 in	6.1 to 7.3
Bk --	28 to 39 in	clay loam	moderately slow	1.54 to 1.76 in	7.4 to 8.4
BC1,2 --	39 to 80 in	clay loam	moderately slow	5.73 to 6.55 in	7.4 to 8.4

L248B--Annton-Swanlake, firm till complex, 3 to 6 percent slopes

Annton

Extent: 35 to 65 percent of the unit
Landform(s): hills on moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	6.1 to 7.3
Bw -- 10 to 22 in	clay loam	moderate	2.07 to 2.32 in	6.1 to 7.3
Bk -- 22 to 60 in	loam	moderately slow	5.29 to 6.05 in	7.4 to 8.4
BC -- 60 to 80 in	clay loam	moderately slow	2.81 to 3.21 in	7.4 to 8.4

Swanlake, firm till

Extent: 30 to 50 percent of the unit
Landform(s): hills on moraines
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	clay loam	moderately slow	1.34 to 1.50 in	7.4 to 8.4
ABK -- 8 to 18 in	clay loam	moderately slow	1.43 to 1.64 in	7.4 to 8.4
BK -- 18 to 40 in	clay loam	moderately slow	3.09 to 3.53 in	7.4 to 8.4
BC -- 40 to 80 in	clay loam	moderately slow	5.57 to 6.36 in	7.4 to 8.4

L250A--Lowlein loam, firm till, 1 to 3 percent slopes

Lowlein, firm till

Extent: 80 to 90 percent of the unit
Landform(s): flats on moraines, rises on moraines, flats on stream terraces, rises on stream terraces
Slope gradient: 1 to 3 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Ap,AB --	0 to 14 in	loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw1 --	14 to 24 in	sandy loam	moderately rapid	1.18 to 1.38 in	6.1 to 7.3
2Bw2 --	24 to 31 in	loamy sand	rapid	0.43 to 0.78 in	6.1 to 7.3
3BC --	31 to 80 in	clay loam	moderately slow	6.83 to 7.81 in	7.4 to 8.4

L252A--Mayer clay loam, firm till substratum, 0 to 2 percent slopes

Mayer, firm till substratum

Extent: 85 to 95 percent of the unit
Landform(s): rims on depressions on moraines, flats on moraines
Slope gradient: 0 to 2 percent
Parent material: fine-loamy alluvium over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 14 in	clay loam	moderate	2.83 to 3.12 in	7.4 to 8.4
Bg, BCg1 -- 14 to 36 in	clay loam	moderate	4.33 to 4.76 in	7.4 to 8.4
BCg2 -- 36 to 39 in	sandy loam	moderately rapid	0.38 to 0.44 in	7.4 to 8.4
2Cg -- 39 to 61 in	sand	rapid	0.44 to 0.88 in	7.4 to 8.4
3BCg -- 61 to 80 in	clay loam	moderately slow	2.65 to 3.02 in	7.4 to 8.4

L253B--Dickinson fine sandy loam, terrace, 1 to 6 percent slopes

Dickinson, terrace

Extent: 80 to 90 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	fine sandy loam	moderately rapid	2.71 to 3.05 in	6.1 to 7.3
Bw -- 17 to 36 in	fine sandy loam	moderately rapid	2.83 to 3.21 in	6.1 to 7.3
C -- 36 to 60 in	sand	rapid	1.20 to 1.68 in	6.1 to 7.3

M-W--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Map Unit Description (MN)

Redwood County, Minnesota

W--Water

Water

Extent: 100 percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.