

Map Unit Description (MN)

Kanabec 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]

1003B--Udorthents, loamy (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):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated:

Hydric soil:

Hydrologic group:

Potential for frost action:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

1007--Udorthents, shallow (sanitary landfill)

Udorthents, shallow (sanitary landfill)

Extent: 100 percent of the unit

Landform(s): moraines, till plains, lake plains

Slope gradient: 0 to 0 percent

Parent material: variable soil material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

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:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

Map Unit Description (MN)

Kanabec County, Minnesota

1008B--Udipsamments (cut and fill land)

Udipsamments, cut and fill land

Extent: 100 percent of the unit

Landform(s): outwash plains, stream terraces, lake plains

Slope gradient: 0 to 6 percent

Parent material: variable sandy material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

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)

Kanabec County, Minnesota

1013A--Seelyeville and Cathro soils, ponded, 0 to 1 percent slopes

Seelyeville, ponded

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Cathro, ponded, milaca catena

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over dense loamy till
Restrictive feature(s): densic material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | moderately rapid | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | moderately rapid | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

1017A--Fluvaquents, ponded, 0 to 1 percent slopes, frequently flooded

Fluvaquents, frequently flooded, ponded

Extent: 80 to 100 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: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|------------|--|---------------------|---------------------------------|------------|
| A -- | 0 to 6 in | mucky silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| Cg -- | 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

1020A--Bowstring muck and Fluvaquents, loamy, 0 to 1 percent slopes, frequently flooded

Bowstring, frequently flooded

Extent: 25 to 75 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic materials containing strata of alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|---|---------------------|---------------------------------|------------|
| Oa -- 0 to 38 in | muck | moderately rapid | 13.37 to 17.19 in | |
| Cg -- 38 to 47 in | stratified fine sand to loamy fine sand | rapid | 0.43 to 0.87 in | 5.6 to 7.3 |
| Oa' -- 47 to 80 in | muck | moderately rapid | 11.57 to 14.88 in | |

Fluvaquents, frequently flooded, loamy

Extent: 20 to 60 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| A -- 0 to 6 in | mucky silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| Cg -- 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

1023A--Seelyeville and Markey soils, ponded, 0 to 1 percent slopes

Seelyeville, ponded

Extent: 0 to 100 percent of the unit

Landform(s): lake plains, outwash plains, stream terraces

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 15 in | muck | moderately rapid | 5.24 to 6.73 in | |
| Oa2,Oa5 -- 15 to 80 in | muck | moderately rapid | 22.74 to 29.23 in | |

Markey, ponded

Extent: 0 to 100 percent of the unit

Landform(s): lake plains, outwash plains, stream terraces

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 27 in | muck | moderately rapid | 9.51 to 12.22 in | |
| A -- 27 to 32 in | loamy sand | rapid | 0.28 to 0.57 in | 5.6 to 7.3 |
| Cg -- 32 to 80 in | sand | rapid | 1.92 to 3.36 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

1025A--Fluvaquents and Udifluvents, loamy, 0 to 2 percent slopes, frequently flooded

Fluvaquents, frequently flooded, loamy

Extent: 25 to 80 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated: 5w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| A -- 0 to 6 in | silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| Cg -- 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Udifluvents, frequently flooded, loamy

Extent: 10 to 50 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: somewhat poorly 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: 4w

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| A -- 0 to 6 in | silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| Cg -- 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

1026A--Udifluents and Fluvaquents, loamy, 0 to 2 percent slopes, occasionally flooded

Udifluents, occas. flooded, moderately well drained

Extent: 25 to 65 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated: 2w

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| A -- 0 to 6 in | silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| C -- 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Udifluents, occas. flooded, somewhat poorly drained

Extent: 15 to 50 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: somewhat poorly 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: 2w

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| A -- 0 to 6 in | silt loam | moderate | 1.18 to 1.42 in | 5.6 to 7.3 |
| Cg -- 6 to 80 in | stratified silt loam to gravelly loamy coarse sand | rapid | 4.44 to 16.28 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C1B--Milaca-Brennyville complex, 3 to 8 percent slopes, stony

Milaca, stony

Extent: 56 to 80 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 4 to 8 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.18 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 13 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 13 to 43 in | fine sandy loam | moderately rapid | 2.99 to 4.49 in | 5.1 to 6.5 |
| BCd -- 43 to 80 in | fine sandy loam | very slow | 1.85 to 2.96 in | 5.6 to 7.3 |

Brennyville, stony

Extent: 10 to 44 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C3B--Mora fine sandy loam, 3 to 6 percent slopes, stony

Mora, stony

Extent: 50 to 70 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C5C--Milaca fine sandy loam, 8 to 15 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 8 to 15 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| A -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 15 in | fine sandy loam | moderately rapid | 1.21 to 2.09 in | 5.1 to 6.5 |
| E/B,Bt1,Bt2 -- 15 to 42 in | fine sandy loam | moderately rapid | 2.72 to 4.07 in | 5.1 to 6.5 |
| BCd -- 42 to 80 in | fine sandy loam | very slow | 1.89 to 3.02 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C5E--Milaca fine sandy loam, 15 to 30 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 15 to 30 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| A -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 15 in | fine sandy loam | moderately rapid | 1.21 to 2.09 in | 5.1 to 6.5 |
| E/B,Bt1,Bt2 -- 15 to 42 in | fine sandy loam | moderately rapid | 2.72 to 4.07 in | 5.1 to 6.5 |
| BCd -- 42 to 80 in | fine sandy loam | very slow | 1.89 to 3.02 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C6A--Cebana silt loam, 0 to 2 percent slopes, stony

Cebana, stony

Extent: 65 to 85 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C9A--Mora, wet-Cebana complex, 0 to 3 percent slopes, stony

Mora, wet, stony

Extent: 43 to 60 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 1 to 3 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Cebana, stony

Extent: 15 to 27 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C10B--Brennyville complex, 1 to 6 percent slopes, stony

Brennyville, stony

Extent: 40 to 85 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2,2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Brennyville, wet, stony

Extent: 5 to 35 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 1 to 3 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2,2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C10B--Brennyville complex, 1 to 6 percent slopes, stony

Map Unit Description (MN)

Kanabec County, Minnesota

C11B--Mora-Brennyville, wet, complex, 1 to 6 percent slopes, stony

Mora, stony

Extent: 40 to 70 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Brennyville, wet, stony

Extent: 10 to 35 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 1 to 3 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C11B--Mora-Brennyville, wet, complex, 1 to 6 percent slopes, stony

Map Unit Description (MN)

Kanabec County, Minnesota

C12A--Brennyville, wet-Cebana complex, 0 to 4 percent slopes, stony

Brennyville, wet, stony

Extent: 52 to 78 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 1 to 4 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Cebana, stony

Extent: 9 to 18 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C15B--Brennyville-Mora complex, 3 to 6 percent slopes, stony

Brennyville, stony

Extent: 30 to 75 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Mora, stony

Extent: 10 to 35 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C15B--Brennyville-Mora complex, 3 to 6 percent slopes, stony

Map Unit Description (MN)

Kanabec County, Minnesota

C16A--Mahtomedi-Chetek complex, 0 to 2 percent slopes

Mahtomedi

Extent: 30 to 60 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 2 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 9 in | gravelly coarse sandy loam | moderately rapid | 0.20 to 0.77 in | 5.1 to 6.5 |
| Bw -- 9 to 20 in | gravelly coarse sand | very rapid | 0.11 to 0.66 in | 5.1 to 6.5 |
| BC, C -- 20 to 80 in | gravelly coarse sand | very rapid | 0.60 to 3.59 in | 5.1 to 6.5 |

Chetek

Extent: 15 to 50 percent of the unit

Landform(s): outwash plains, stream 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C16B--Mahtomedi-Chetek complex, 1 to 8 percent slopes

Mahtomedi

Extent: 35 to 70 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 8 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 9 in | gravelly coarse sandy loam | moderately rapid | 0.20 to 0.77 in | 5.1 to 6.5 |
| Bw -- 9 to 20 in | gravelly coarse sand | very rapid | 0.11 to 0.66 in | 5.1 to 6.5 |
| BC, C -- 20 to 80 in | gravelly coarse sand | very rapid | 0.60 to 3.59 in | 5.1 to 6.5 |

Chetek

Extent: 5 to 30 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 8 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC,2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C16C--Mahtomedi-Chetek complex, 8 to 15 percent slopes

Mahtomedi

Extent: 30 to 50 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 8 to 15 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 9 in | gravelly coarse sandy loam | moderately rapid | 0.20 to 0.77 in | 5.1 to 6.5 |
| Bw -- 9 to 20 in | gravelly coarse sand | very rapid | 0.11 to 0.66 in | 5.1 to 6.5 |
| BC, C -- 20 to 80 in | gravelly coarse sand | very rapid | 0.60 to 3.59 in | 5.1 to 6.5 |

Chetek

Extent: 30 to 40 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 8 to 15 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C16E--Mahtomedi-Chetek complex, 15 to 30 percent slopes

Mahtomedi

Extent: 30 to 50 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 15 to 30 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively 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: 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| E -- 4 to 9 in | gravelly coarse sandy loam | moderately rapid | 0.20 to 0.77 in | 5.1 to 6.5 |
| Bw -- 9 to 20 in | gravelly coarse sand | very rapid | 0.11 to 0.66 in | 5.1 to 6.5 |
| BC, C -- 20 to 80 in | gravelly coarse sand | very rapid | 0.60 to 3.59 in | 5.1 to 6.5 |

Chetek

Extent: 30 to 40 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 15 to 30 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C17A--Rosholt-Chetek complex, 0 to 2 percent slopes

Rosholt

Extent: 50 to 65 percent of the unit

Landform(s): outwash plains, stream 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| B/E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.39 to 0.75 in | 5.1 to 6.5 |
| Bt -- 12 to 28 in | loam | moderate | 1.45 to 3.07 in | 5.1 to 6.5 |
| 2BC -- 28 to 32 in | loamy sand | rapid | 0.12 to 0.35 in | 5.1 to 6.5 |
| 2C -- 32 to 80 in | gravelly coarse sand | very rapid | 0.48 to 2.88 in | 5.1 to 6.5 |

Chetek

Extent: 30 to 40 percent of the unit

Landform(s): outwash plains, stream 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C17B--Rosholt-Chetek complex, 2 to 8 percent slopes

Rosholt

Extent: 30 to 90 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 2 to 8 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| B/E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.39 to 0.75 in | 5.1 to 6.5 |
| Bt -- 12 to 28 in | loam | moderate | 1.45 to 3.07 in | 5.1 to 6.5 |
| 2BC -- 28 to 32 in | loamy sand | rapid | 0.12 to 0.35 in | 5.1 to 6.5 |
| 2C -- 32 to 80 in | gravelly coarse sand | very rapid | 0.48 to 2.88 in | 5.1 to 6.5 |

Chetek

Extent: 4 to 35 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 2 to 8 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C17C--Rosholt-Chetek complex, 8 to 15 percent slopes

Rosholt

Extent: 35 to 80 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 8 to 15 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| B/E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.39 to 0.75 in | 5.1 to 6.5 |
| Bt -- 12 to 28 in | loam | moderate | 1.45 to 3.07 in | 5.1 to 6.5 |
| 2BC -- 28 to 32 in | loamy sand | rapid | 0.12 to 0.35 in | 5.1 to 6.5 |
| 2C -- 32 to 80 in | gravelly coarse sand | very rapid | 0.48 to 2.88 in | 5.1 to 6.5 |

Chetek

Extent: 15 to 50 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 8 to 15 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C17E--Rosholt-Chetek complex, 15 to 40 percent slopes

Rosholt

Extent: 40 to 75 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 15 to 40 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| A -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| B/E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.39 to 0.75 in | 5.1 to 6.5 |
| Bt -- 12 to 28 in | loam | moderate | 1.45 to 3.07 in | 5.1 to 6.5 |
| 2BC -- 28 to 32 in | loamy sand | rapid | 0.12 to 0.35 in | 5.1 to 6.5 |
| 2C -- 32 to 80 in | gravelly coarse sand | very rapid | 0.48 to 2.88 in | 5.1 to 6.5 |

Chetek

Extent: 15 to 30 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 15 to 40 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C18B--Branstad loam, 2 to 6 percent slopes

Branstad

Extent: 60 to 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: loamy 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) .37

Land capability, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 6 in | loam | moderate | 0.89 to 1.30 in | 5.1 to 6.5 |
| E -- 6 to 11 in | fine sandy loam | moderately rapid | 0.67 to 0.92 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | loam | moderate | 0.77 to 1.06 in | 5.1 to 6.5 |
| Bt -- 17 to 45 in | loam | moderate | 3.35 to 5.03 in | 5.6 to 7.3 |
| C -- 45 to 80 in | loam | moderate | 4.20 to 6.31 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C19A--Longsiding-Grasston complex, 0 to 3 percent slopes

Longsiding

Extent: 50 to 75 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 3 percent

Parent material: silty glaciolacustrine

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) .43

Land capability, nonirrigated: 2w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 12 in | silty clay loam | moderately slow | 0.30 to 0.61 in | 5.1 to 7.3 |
| Bt1, Bt3 -- 12 to 35 in | silty clay | slow | 1.86 to 4.65 in | 5.1 to 7.3 |
| Bk -- 35 to 45 in | silt loam | moderately slow | 1.77 to 2.17 in | 7.4 to 8.4 |
| C -- 45 to 80 in | silty clay loam | moderately slow | 6.31 to 7.71 in | 7.4 to 8.4 |

Grasston

Extent: 20 to 35 percent of the unit

Landform(s): lake plains

Slope gradient: 1 to 3 percent

Parent material: silty glaciolacustrine

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) .37

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 14 in | silty clay loam | moderately slow | 0.56 to 1.13 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 14 to 42 in | silty clay | slow | 2.24 to 5.59 in | 5.1 to 7.3 |
| Bk -- 42 to 66 in | silt loam | moderate | 4.32 to 5.28 in | 7.4 to 8.4 |
| C -- 66 to 80 in | silty clay loam | moderately slow | 2.48 to 3.03 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C21A--Quam mucky silty clay loam, depressional, MLRA 90, 0 to 1 percent slopes

Quam, depressional, mlra 90

Extent: 70 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: silty glaciolacustrine

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: 6w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------------|---------------------|---------------------------------|------------|
| A1 -- 0 to 14 in | mucky silty clay loam | moderately slow | 2.89 to 3.17 in | 5.1 to 7.3 |
| A2 -- 14 to 24 in | silty clay loam | moderately slow | 2.15 to 2.35 in | 5.1 to 7.3 |
| Bg -- 24 to 32 in | silty clay loam | moderately slow | 0.71 to 1.57 in | 5.1 to 7.3 |
| Cg -- 32 to 80 in | silty clay loam | moderately slow | 8.65 to 10.57 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C23B--Antigo-Chetek complex, 2 to 8 percent slopes

Antigo

Extent: 45 to 80 percent of the unit

Landform(s): outwash plains, stream 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .49

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | silt loam | moderate | 0.75 to 0.87 in | 5.1 to 6.5 |
| E -- 4 to 12 in | silt loam | moderate | 1.50 to 1.73 in | 5.1 to 6.5 |
| B/E -- 12 to 18 in | silt loam | moderate | 1.20 to 1.39 in | 5.1 to 6.5 |
| 2Bt -- 18 to 30 in | fine sandy loam | moderate | 1.06 to 2.13 in | 5.1 to 6.5 |
| 3C -- 30 to 80 in | gravelly coarse sand | very rapid | 0.50 to 3.00 in | 5.1 to 6.5 |

Chetek

Extent: 15 to 40 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 2 to 8 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC,2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C24A--Billyboy-Ossmer complex, 0 to 3 percent slopes

Billyboy

Extent: 50 to 85 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 3 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.42 to 1.73 in | 5.1 to 6.5 |
| E/B -- 8 to 13 in | silt loam | moderate | 0.97 to 1.13 in | 5.1 to 6.5 |
| Bt1 -- 13 to 19 in | silt loam | moderate | 1.12 to 1.30 in | 5.1 to 6.5 |
| 2Bt2 -- 19 to 25 in | loam | moderate | 0.57 to 1.13 in | 5.1 to 6.5 |
| 3C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Ossmer

Extent: 15 to 40 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.63 to 1.99 in | 5.1 to 6.5 |
| B/E -- 9 to 13 in | silt loam | moderate | 0.75 to 0.87 in | 5.1 to 6.5 |
| Bt1 -- 13 to 26 in | silt loam | moderate | 2.47 to 2.86 in | 5.1 to 6.5 |
| 2Bt2 -- 26 to 30 in | loam | moderate | 0.35 to 0.71 in | 5.1 to 6.5 |
| 3C -- 30 to 80 in | gravelly coarse sand | very rapid | 0.50 to 3.00 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C25A--Alstad loam, 1 to 3 percent slopes

Alstad

Extent: 70 to 90 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 3 percent

Parent material: loamy 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated: 2w

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | loam | moderate | 1.36 to 1.99 in | 5.1 to 6.5 |
| E -- 9 to 15 in | fine sandy loam | moderately rapid | 0.77 to 1.06 in | 5.1 to 6.5 |
| E/B, B/E -- 15 to 24 in | loam | moderate | 1.18 to 1.63 in | 5.1 to 6.5 |
| Bt -- 24 to 49 in | loam | moderate | 2.98 to 4.46 in | 5.6 to 7.3 |
| C -- 49 to 60 in | loam | moderate | 1.32 to 1.98 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C26A--Foglake silt loam, 0 to 2 percent slopes

Foglake

Extent: 75 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: silty glaciolacustrine

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) .37

Land capability, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.73 to 1.89 in | 5.1 to 7.3 |
| Eg -- 8 to 16 in | silt loam | moderate | 1.41 to 1.82 in | 5.1 to 7.3 |
| Btg,BCg -- 16 to 47 in | silty clay loam | slow | 2.46 to 6.14 in | 5.1 to 7.3 |
| Cg -- 47 to 80 in | silty clay loam | moderately slow | 5.95 to 7.28 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C27A--Oesterle-Scott Lake complex, 0 to 3 percent slopes

Oesterle

Extent: 30 to 75 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 10 in | loam | moderate | 1.48 to 1.87 in | 5.1 to 6.5 |
| B/E -- 10 to 17 in | fine sandy loam | moderately rapid | 0.71 to 1.35 in | 5.1 to 6.5 |
| Bt -- 17 to 34 in | loam | moderate | 1.52 to 3.22 in | 5.1 to 6.5 |
| 2BC, 2C -- 34 to 80 in | gravelly coarse sand | very rapid | 0.46 to 2.76 in | 5.1 to 6.5 |

Scott Lake

Extent: 15 to 34 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 3 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| E -- 8 to 11 in | fine sandy loam | moderately rapid | 0.31 to 0.60 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | fine sandy loam | moderately rapid | 0.53 to 1.12 in | 5.1 to 6.5 |
| Bt -- 17 to 25 in | loam | moderate | 0.74 to 1.57 in | 5.1 to 6.5 |
| 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C29D2--Debs silt loam, 12 to 18 percent slopes, eroded

Debs, moderately eroded

Extent: 70 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material: silty glaciolacustrine

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) .43

Land capability, nonirrigated: 4e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | silt loam | moderate | 1.02 to 1.23 in | 5.1 to 7.3 |
| E/B, B/E -- 5 to 22 in | silty clay loam | moderately slow | 1.86 to 3.72 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 22 to 40 in | silty clay loam | slow | 1.45 to 3.62 in | 5.1 to 7.3 |
| BC, C -- 40 to 80 in | silty clay loam | moderately slow | 7.16 to 8.75 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C29E--Debs silt loam, 18 to 25 percent slopes

Debs

Extent: 70 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 18 to 25 percent

Parent material: silty glaciolacustrine

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) .37

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| A -- 0 to 8 in | silt loam | moderate | 1.57 to 1.89 in | 5.1 to 7.3 |
| Bt1,Bt2 -- 8 to 32 in | silty clay loam | slow | 1.92 to 4.80 in | 5.1 to 7.3 |
| Btk -- 32 to 45 in | silty clay | slow | 1.04 to 2.60 in | 7.4 to 8.4 |
| C -- 45 to 60 in | silty clay loam | moderately slow | 2.69 to 3.29 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C31B--Grasston silt loam, 2 to 6 percent slopes

Grasston

Extent: 75 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material: silty glaciolacustrine

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) .37

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 14 in | silty clay loam | moderately slow | 0.56 to 1.13 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 14 to 42 in | silty clay | slow | 2.24 to 5.59 in | 5.1 to 7.3 |
| Bk -- 42 to 66 in | silt loam | moderate | 4.32 to 5.28 in | 7.4 to 8.4 |
| C -- 66 to 80 in | silty clay loam | moderately slow | 2.48 to 3.03 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C31C2--Grasston silt loam, 6 to 12 percent slopes, eroded

Grasston, moderately eroded

Extent: 60 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material: silty glaciolacustrine

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) .43

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 14 in | silty clay loam | moderately slow | 0.56 to 1.13 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 14 to 42 in | silty clay | slow | 2.24 to 5.59 in | 5.1 to 7.3 |
| Bk -- 42 to 66 in | silt loam | moderate | 4.32 to 5.28 in | 7.4 to 8.4 |
| C -- 66 to 80 in | silty clay loam | moderately slow | 2.48 to 3.03 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C33B--Seelyeville-Cathro complex, seep land, 1 to 5 percent slopes

Seelyeville, seepland

Extent: 50 to 90 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 1 to 5 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Cathro, seepland, milaca catena

Extent: 10 to 50 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 1 to 5 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C35A--Ossmer-Billyboy complex, 0 to 3 percent slopes

Ossmer

Extent: 40 to 77 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.63 to 1.99 in | 5.1 to 6.5 |
| B/E -- 9 to 13 in | silt loam | moderate | 0.75 to 0.87 in | 5.1 to 6.5 |
| Bt1 -- 13 to 26 in | silt loam | moderate | 2.47 to 2.86 in | 5.1 to 6.5 |
| 2Bt2 -- 26 to 30 in | loam | moderate | 0.35 to 0.71 in | 5.1 to 6.5 |
| 3C -- 30 to 80 in | gravelly coarse sand | very rapid | 0.50 to 3.00 in | 5.1 to 6.5 |

Billyboy

Extent: 15 to 50 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 3 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.42 to 1.73 in | 5.1 to 6.5 |
| E/B -- 8 to 13 in | silt loam | moderate | 0.97 to 1.13 in | 5.1 to 6.5 |
| Bt1 -- 13 to 19 in | silt loam | moderate | 1.12 to 1.30 in | 5.1 to 6.5 |
| 2Bt2 -- 19 to 25 in | loam | moderate | 0.57 to 1.13 in | 5.1 to 6.5 |
| 3C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C40A--Scott Lake fine sandy loam, 0 to 3 percent slopes

Scott Lake

Extent: 60 to 80 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| E -- 8 to 11 in | fine sandy loam | moderately rapid | 0.31 to 0.60 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | fine sandy loam | moderately rapid | 0.53 to 1.12 in | 5.1 to 6.5 |
| Bt -- 17 to 25 in | loam | moderate | 0.74 to 1.57 in | 5.1 to 6.5 |
| 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C44A--Wurtsmith-Grettum complex, 0 to 3 percent slopes

Wurtsmith

Extent: 40 to 65 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 percent

Parent material: outwash

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): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .24

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | loamy sand | rapid | 0.72 to 1.00 in | 5.1 to 6.5 |
| Bw -- 9 to 51 in | sand | rapid | 2.11 to 4.63 in | 5.1 to 6.5 |
| C -- 51 to 80 in | sand | rapid | 1.44 to 2.01 in | 5.1 to 6.5 |

Grettum

Extent: 35 to 50 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 3 percent

Parent material: outwash

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): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .20

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- 8 to 43 in | sand | rapid | 1.75 to 3.85 in | 5.1 to 6.5 |
| E and Bt -- 43 to 60 in | sand | rapid | 1.02 to 1.35 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C49A--Antigo silt loam, 0 to 2 percent slopes

Antigo

Extent: 55 to 93 percent of the unit

Landform(s): outwash plains, stream 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .49

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | silt loam | moderate | 0.75 to 0.87 in | 5.1 to 6.5 |
| E -- 4 to 12 in | silt loam | moderate | 1.50 to 1.73 in | 5.1 to 6.5 |
| B/E -- 12 to 18 in | silt loam | moderate | 1.20 to 1.39 in | 5.1 to 6.5 |
| 2Bt -- 18 to 30 in | fine sandy loam | moderate | 1.06 to 2.13 in | 5.1 to 6.5 |
| 3C -- 30 to 80 in | gravelly coarse sand | very rapid | 0.50 to 3.00 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C53B--Pomroy loamy fine sand, 2 to 6 percent slopes

Pomroy

Extent: 80 to 95 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 2 to 6 percent

Parent material: sandy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .28

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 6 in | loamy fine sand | rapid | 0.47 to 0.71 in | 5.1 to 6.5 |
| E -- 6 to 22 in | loamy fine sand | rapid | 0.81 to 1.78 in | 5.1 to 6.5 |
| 2Bt -- 22 to 31 in | sandy loam | moderately rapid | 0.91 to 1.45 in | 5.1 to 6.5 |
| 2BC -- 31 to 41 in | sandy loam | slow | 0.79 to 1.18 in | 5.6 to 7.3 |
| 2BCd -- 41 to 60 in | fine sandy loam | very slow | 0.94 to 1.51 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C53C--Pomroy loamy fine sand, 6 to 12 percent slopes

Pomroy

Extent: 75 to 95 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 6 to 12 percent

Parent material: sandy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .28

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 6 in | loamy fine sand | rapid | 0.47 to 0.71 in | 5.1 to 6.5 |
| E -- 6 to 22 in | loamy fine sand | rapid | 0.81 to 1.78 in | 5.1 to 6.5 |
| 2Bt -- 22 to 31 in | sandy loam | moderately rapid | 0.91 to 1.45 in | 5.1 to 6.5 |
| 2BC -- 31 to 41 in | sandy loam | slow | 0.79 to 1.18 in | 5.6 to 7.3 |
| 2BCd -- 41 to 60 in | fine sandy loam | very slow | 0.94 to 1.51 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C61A--Cathro and Hassman soils, depressional, 0 to 1 percent slopes

Hassman, depressional

Extent: 0 to 100 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: clayey glaciolacustrine

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): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer)

Land capability, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 4 in | muck | moderately rapid | 1.38 to 1.77 in | 5.1 to 6.5 |
| A -- 4 to 8 in | silty clay loam | moderately slow | 0.83 to 0.94 in | 5.1 to 6.5 |
| Bg -- 8 to 26 in | silty clay | slow | 1.63 to 3.62 in | 5.1 to 7.3 |
| BCg, Cg -- 26 to 80 in | silty clay | slow | 4.31 to 10.79 in | 7.4 to 8.4 |

Cathro, depressional, grasston catena

Extent: 0 to 100 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over clayey glaciolacustrine

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.30 in | 5.6 to 6.5 |
| Cg1 -- 37 to 62 in | silty clay | slow | 2.02 to 5.04 in | 7.4 to 8.4 |
| Cg2 -- 62 to 80 in | silty clay loam | moderately slow | 3.19 to 3.90 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C75A--Seelyeville and Cathro, Milaca catena soils, depressional, 0 to 1 percent slopes

Seelyeville, depressional

Extent: 0 to 95 percent of the unit

Landform(s): depressions on interdrumlins

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Cathro, depressional, milaca catena

Extent: 0 to 95 percent of the unit

Landform(s): depressions on interdrumlins

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C85A--Brickton silt loam, 0 to 2 percent slopes

Brickton

Extent: 70 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: clayey glaciolacustrine

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) .32

Land capability, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.73 to 1.89 in | 5.1 to 7.3 |
| Btg1, Btg2 -- 8 to 37 in | clay | slow | 2.62 to 5.83 in | 5.1 to 7.3 |
| Cg1, Cg2 -- 37 to 80 in | silty clay | slow | 3.43 to 8.58 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C86A--Aftad-Plover complex, 0 to 3 percent slopes

Aftad

Extent: 50 to 85 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 3 percent

Parent material: loamy glaciolacustrine

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) .28

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.36 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 12 in | loamy fine sand | rapid | 0.25 to 0.47 in | 4.5 to 6.5 |
| B/E -- 12 to 16 in | loam | moderate | 0.35 to 0.95 in | 4.5 to 6.5 |
| Bt -- 16 to 32 in | loam | moderate | 2.68 to 3.46 in | 4.5 to 6.5 |
| C -- 32 to 80 in | stratified silt loam to fine sand | rapid | 2.40 to 10.57 in | 4.5 to 6.5 |

Plover

Extent: 15 to 50 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: loamy glaciolacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 2w

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.36 to 1.63 in | 5.1 to 6.5 |
| B/E -- 9 to 15 in | loam | moderate | 0.47 to 1.30 in | 4.5 to 6.5 |
| Bt -- 15 to 29 in | silt loam | moderate | 2.27 to 3.12 in | 4.5 to 6.5 |
| C1, C2 -- 29 to 80 in | stratified silt loam to fine sand | rapid | 2.54 to 11.17 in | 4.5 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C87A--Plover fine sandy loam, 0 to 3 percent slopes

Plover

Extent: 60 to 85 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 3 percent

Parent material: loamy glaciolacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 2w

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.36 to 1.63 in | 5.1 to 6.5 |
| B/E -- 9 to 15 in | loam | moderate | 0.47 to 1.30 in | 4.5 to 6.5 |
| Bt -- 15 to 29 in | silt loam | moderate | 2.27 to 3.12 in | 4.5 to 6.5 |
| C1, C2 -- 29 to 80 in | stratified silt loam to fine sand | rapid | 2.54 to 11.17 in | 4.5 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C88A--Fenander fine sandy loam, 0 to 2 percent slopes

Fenander

Extent: 65 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: loamy glaciolacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

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

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.36 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 15 in | fine sandy loam | moderately rapid | 0.53 to 1.00 in | 4.5 to 6.5 |
| Bt -- 15 to 27 in | loam | moderate | 1.83 to 2.69 in | 4.5 to 6.5 |
| BC -- 27 to 33 in | fine sandy loam | moderately rapid | 0.47 to 1.12 in | 4.5 to 6.5 |
| 2C -- 33 to 80 in | stratified silt loam to fine sand | rapid | 2.34 to 10.31 in | 4.5 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C89A--Cathro (Grasston catena) and Seelyeville soils, depressional, 0 to 1 percent slopes

Cathro, depressional, grasston catena

Extent: 0 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over clayey glaciolacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.30 in | 5.6 to 6.5 |
| Cg1 -- 37 to 62 in | silty clay | slow | 2.02 to 5.04 in | 7.4 to 8.4 |
| Cg2 -- 62 to 80 in | silty clay | slow | 1.42 to 3.54 in | 7.4 to 8.4 |

Seelyeville, depressional

Extent: 0 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C91B--Milaca, stony-Chetek complex, 3 to 8 percent slopes

Milaca, stony

Extent: 30 to 70 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 8 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.27 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 13 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E,Bt -- 13 to 43 in | fine sandy loam | moderately rapid | 2.99 to 4.49 in | 5.1 to 6.5 |
| BCd -- 43 to 80 in | fine sandy loam | very slow | 1.85 to 2.96 in | 5.6 to 7.3 |

Chetek

Extent: 20 to 50 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 8 percent

Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC,2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C91C--Milaca, stony-Chetek complex, 8 to 15 percent slopes

Milaca, stony

Extent: 30 to 70 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 8 to 15 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.27 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 13 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E,Bt -- 13 to 43 in | fine sandy loam | moderately rapid | 2.99 to 4.49 in | 5.1 to 6.5 |
| BCd -- 43 to 80 in | fine sandy loam | very slow | 1.85 to 2.96 in | 5.6 to 7.3 |

Chetek

Extent: 20 to 50 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 8 to 15 percent

Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC,2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C91E--Milaca, stony-Chetek complex, 15 to 30 percent slopes

Milaca, stony

Extent: 30 to 75 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 15 to 30 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| A -- 0 to 9 in | fine sandy loam | moderately rapid | 1.27 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 13 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 13 to 43 in | fine sandy loam | moderately rapid | 2.99 to 4.49 in | 5.1 to 6.5 |
| BCd -- 43 to 80 in | fine sandy loam | very slow | 1.85 to 2.96 in | 5.6 to 7.3 |

Chetek

Extent: 20 to 70 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 15 to 30 percent

Parent material: drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C92A--Cathro (Grasston catena) and Seelyeville soils, wooded, 0 to 1 percent slopes

Cathro, grasston catena

Extent: 0 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over clayey lacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer)

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.30 in | 5.6 to 6.5 |
| Cg1 -- 37 to 62 in | silty clay | slow | 2.02 to 5.04 in | 7.4 to 8.4 |
| Cg2 -- 62 to 80 in | silty clay | slow | 1.42 to 3.54 in | 7.4 to 8.4 |

Seelyeville

Extent: 0 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer)

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C93A--Greenwood mucky peat (Grasston catena), 0 to 1 percent slopes

Greenwood

Extent: 85 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: moderately decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oi -- 0 to 8 in | peat | very rapid | 4.33 to 5.12 in | |
| Oe -- 8 to 80 in | mucky peat | rapid | 32.42 to 39.63 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C95A--Seelyeville and Cathro (Milaca catena) soils, wooded, 0 to 1 percent slopes

Seelyeville

Extent: 0 to 95 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Cathro, milaca catena

Extent: 0 to 95 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C96A--Cathro, Twig, and Giese, stony, soils, depressional, 0 to 1 percent slopes

Cathro, depressional, milaca catena

| | |
|--|--|
| <i>Extent:</i> 0 to 100 percent of the unit | <i>Soil loss tolerance (T factor):</i> 1 |
| <i>Landform(s):</i> interdrumlins, moraines | <i>Wind erodibility group (WEG):</i> 8 |
| <i>Slope gradient:</i> 0 to 1 percent | <i>Wind erodibility index (WEI):</i> 0 |
| <i>Parent material:</i> highly decomposed organic material over dense loamy till | <i>Kw factor (surface layer)</i> .02 |
| <i>Restrictive feature(s):</i> densic material at 40 to 80 inches | <i>Land capability, nonirrigated:</i> 7w |
| <i>Flooding:</i> none | <i>Hydric soil:</i> yes |
| <i>Ponding:</i> frequent | <i>Hydrologic group:</i> C/D |
| <i>Drainage class:</i> very poorly drained | <i>Potential for frost action:</i> high |

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Twig, depressional

| | |
|---|--|
| <i>Extent:</i> 0 to 100 percent of the unit | <i>Soil loss tolerance (T factor):</i> 1 |
| <i>Landform(s):</i> interdrumlins, moraines | <i>Wind erodibility group (WEG):</i> 2 |
| <i>Slope gradient:</i> 0 to 1 percent | <i>Wind erodibility index (WEI):</i> 134 |
| <i>Parent material:</i> thin highly decomposed organic material over dense loamy till | <i>Kw factor (surface layer)</i> .02 |
| <i>Restrictive feature(s):</i> densic material at 40 to 80 inches | <i>Land capability, nonirrigated:</i> 6w |
| <i>Flooding:</i> none | <i>Hydric soil:</i> yes |
| <i>Ponding:</i> frequent | <i>Hydrologic group:</i> B/D |
| <i>Drainage class:</i> very poorly drained | <i>Potential for frost action:</i> high |

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | 3.5 to 6.0 |
| A -- 10 to 16 in | loam | moderate | 1.07 to 1.51 in | 3.5 to 6.0 |
| Eg -- 16 to 21 in | fine sandy loam | moderately rapid | 0.61 to 1.04 in | 3.5 to 6.0 |
| 2Bg, 2Bw -- 21 to 44 in | sandy loam | moderately rapid | 2.09 to 4.41 in | 3.5 to 6.0 |
| 2BC -- 44 to 52 in | fine sandy loam | slow | 0.63 to 0.94 in | 5.6 to 7.3 |
| 2BCd -- 52 to 80 in | fine sandy loam | very slow | 1.40 to 2.24 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C96A--Cathro, Twig, and Giese, stony, soils, depressional, 0 to 1 percent slopes

Giese, depressional, stony

Extent: 0 to 100 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 1 in | muck | moderately rapid | 0.41 to 0.53 in | 5.1 to 6.0 |
| A -- 1 to 6 in | silt loam | moderate | 0.80 to 1.13 in | 5.1 to 6.0 |
| E -- 6 to 11 in | silt loam | moderate | 0.77 to 1.13 in | 5.1 to 6.0 |
| Bg -- 11 to 36 in | silt loam | moderate | 3.47 to 5.46 in | 5.1 to 6.5 |
| 2BC -- 36 to 70 in | fine sandy loam | slow | 2.74 to 4.11 in | 5.6 to 7.3 |
| 2BCd -- 70 to 80 in | fine sandy loam | very slow | 0.49 to 0.79 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C97A--Cathro, sandy substratum, and Seelyeville soils, depressional, 0 to 1 percent slopes

Cathro, sandy substratum, depressional

Extent: 0 to 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 0.65 to 1.30 in | 5.1 to 6.5 |
| Bg -- 37 to 62 in | loam | moderate | 2.52 to 4.79 in | 5.1 to 6.5 |
| 2Cg -- 62 to 80 in | gravelly coarse sand | very rapid | 0.18 to 1.06 in | 5.1 to 7.3 |

Seelyeville, depressional

Extent: 0 to 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C101A--Greenwood mucky peat (Milaca catena), 0 to 1 percent slopes

Greenwood

Extent: 85 to 95 percent of the unit

Landform(s): interdrumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: moderately decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oi -- 0 to 8 in | peat | very rapid | 4.33 to 5.12 in | |
| Oe -- 8 to 80 in | mucky peat | rapid | 32.42 to 39.63 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C102A--Cathro, sandy substratum, and Seelyeville soils, ponded , 0 to 1 percent slopes

Cathro, sandy substratum, ponded

Extent: 0 to 100 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 0.65 to 1.30 in | 5.1 to 6.5 |
| Bg -- 37 to 62 in | loam | moderate | 2.52 to 4.79 in | 5.1 to 6.5 |
| 2Cg -- 62 to 80 in | gravelly coarse sand | very rapid | 0.18 to 1.06 in | 5.1 to 7.3 |

Seelyeville, ponded

Extent: 0 to 100 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C103A--Cathro, sandy substratum, and Seelyeville soils, wooded, 0 to 1 percent slopes

Cathro, sandy substratum

Extent: 0 to 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 0.65 to 1.30 in | 5.1 to 6.5 |
| Bg -- 37 to 62 in | loam | moderate | 2.52 to 4.79 in | 5.1 to 6.5 |
| 2Cg -- 62 to 80 in | gravelly coarse sand | very rapid | 0.18 to 1.06 in | 5.1 to 7.3 |

Seelyeville

Extent: 0 to 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: occasional

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| Oa1 -- 0 to 10 in | muck | moderately rapid | 3.44 to 4.43 in | |
| Oa2,Oa5 -- 10 to 80 in | muck | moderately rapid | 24.53 to 31.54 in | |

Map Unit Description (MN)

Kanabec County, Minnesota

C105A--Dalbo, wet-Brickton complex, 0 to 2 percent slopes

Dalbo, wet

Extent: 55 to 80 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: clayey glaciolacustrine

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) .37

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | silt loam | moderate | 1.56 to 1.70 in | 5.1 to 7.3 |
| E -- 7 to 12 in | silt loam | moderate | 0.80 to 1.04 in | 5.1 to 7.3 |
| Bt1, Bt3 -- 12 to 33 in | silty clay | slow | 1.70 to 4.25 in | 5.1 to 7.3 |
| C1, C2 -- 33 to 80 in | silty clay | slow | 3.75 to 9.37 in | 7.4 to 8.4 |

Brickton

Extent: 15 to 30 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: clayey glaciolacustrine

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) .32

Land capability, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.73 to 1.89 in | 5.1 to 7.3 |
| Btg1, Btg2 -- 8 to 37 in | clay | slow | 2.62 to 5.83 in | 5.1 to 7.3 |
| Cg1, Cg2 -- 37 to 80 in | silty clay | slow | 3.43 to 8.58 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C106B--Dalbo complex, 2 to 6 percent slopes

Dalbo

Extent: 40 to 70 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material: clayey glaciolacustrine

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) .37

Land capability, nonirrigated: 2e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | silt loam | moderate | 1.56 to 1.70 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 7 to 28 in | clay | slow | 1.88 to 4.17 in | 5.1 to 7.3 |
| Btk, Bck -- 28 to 49 in | silty clay | slow | 1.67 to 4.17 in | 5.1 to 7.8 |
| C1, C2 -- 49 to 80 in | silty clay | slow | 2.49 to 6.22 in | 7.4 to 8.4 |

Dalbo, wet

Extent: 25 to 50 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 4 percent

Parent material: clayey glaciolacustrine

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) .37

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | silt loam | moderate | 1.56 to 1.70 in | 5.1 to 7.3 |
| E -- 7 to 12 in | silt loam | moderate | 0.80 to 1.04 in | 5.1 to 7.3 |
| Bt1, Bt3 -- 12 to 33 in | silty clay | slow | 1.70 to 4.25 in | 5.1 to 7.3 |
| C1, C2 -- 33 to 80 in | silty clay | slow | 3.75 to 9.37 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C107A--Fenander fine sandy loam, depressional, 0 to 1 percent slopes

Fenander, depressional

Extent: 75 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material: loamy glaciolacustrine

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer)

Land capability, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|---|---------------------|---------------------------------|------------|
| Oa -- 0 to 12 in | muck | moderately rapid | 4.13 to 5.31 in | 4.5 to 6.5 |
| A -- 12 to 15 in | fine sandy loam | moderately rapid | 0.50 to 0.57 in | 4.5 to 6.5 |
| Bg -- 15 to 47 in | silt loam | moderate | 5.42 to 7.02 in | 4.5 to 6.5 |
| 2BC -- 47 to 80 in | stratified fine sandy loam to loamy fine sand to silt loam to fine sand | rapid | 1.65 to 7.28 in | 4.5 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C108A--Hulligan loam, 0 to 2 percent slopes

Hulligan

Extent: 70 to 85 percent of the unit

Landform(s): outwash plains, stream terraces

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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | loam | moderate | 1.06 to 1.35 in | 5.1 to 6.5 |
| Bw -- 7 to 25 in | loam | moderate | 1.81 to 3.44 in | 5.1 to 6.5 |
| Bg -- 25 to 36 in | loam | moderate | 0.96 to 2.02 in | 5.1 to 6.5 |
| 2BC -- 36 to 50 in | loamy sand | rapid | 0.43 to 1.28 in | 5.1 to 6.5 |
| 2C -- 50 to 80 in | gravelly coarse sand | very rapid | 0.30 to 1.80 in | 5.6 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C109A--Lenroot loamy sand, 1 to 3 percent slopes

Lenroot

Extent: 55 to 90 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 1 to 3 percent

Parent material: outwash

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) .24

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 4 in | fine sandy loam | moderately rapid | 0.55 to 0.71 in | 5.1 to 6.5 |
| Bw -- 4 to 14 in | gravelly coarse sand | very rapid | 0.20 to 0.72 in | 5.1 to 6.5 |
| BC -- 14 to 20 in | gravelly coarse sand | very rapid | 0.06 to 0.35 in | 5.1 to 6.5 |
| C -- 20 to 80 in | gravelly coarse sand | very rapid | 0.60 to 3.59 in | 5.1 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C110A--Annriver silt loam, 0 to 2 percent slopes

Annriver

Extent: 70 to 90 percent of the unit

Landform(s): outwash plains, stream terraces

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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.63 to 2.17 in | 5.1 to 6.5 |
| Eg -- 9 to 14 in | silt loam | moderate | 0.82 to 1.13 in | 5.1 to 6.5 |
| Btg1 -- 14 to 21 in | silt loam | moderate | 1.07 to 1.47 in | 5.1 to 6.5 |
| 2Btg2 -- 21 to 31 in | loam | moderate | 0.92 to 1.84 in | 5.1 to 6.5 |
| 3C -- 31 to 80 in | gravelly coarse sand | very rapid | 0.49 to 2.93 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C111C2--Dalbo silt loam, 6 to 12 percent slopes, moderately eroded

Dalbo, moderately eroded

Extent: 80 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material: clayey glaciolacustrine

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) .37

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | silt loam | moderate | 1.56 to 1.70 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 7 to 28 in | clay | slow | 1.88 to 4.17 in | 5.1 to 7.3 |
| Btk, Bck -- 28 to 49 in | silty clay | slow | 1.67 to 4.17 in | 5.1 to 7.8 |
| C1, C2 -- 49 to 80 in | silty clay | slow | 2.49 to 6.22 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C111D2--Dalbo silt loam, 12 to 18 percent slopes, moderately eroded

Dalbo, moderately eroded

Extent: 85 to 95 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material: clayey glaciolacustrine

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) .37

Land capability, nonirrigated: 4e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | silt loam | moderate | 1.56 to 1.70 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 7 to 28 in | clay | slow | 1.88 to 4.17 in | 5.1 to 7.3 |
| Btk, Bck -- 28 to 49 in | silty clay | slow | 1.67 to 4.17 in | 5.1 to 7.8 |
| C1, C2 -- 49 to 80 in | silty clay | slow | 2.49 to 6.22 in | 7.4 to 8.4 |

Map Unit Description (MN)

Kanabec County, Minnesota

C112A--Graycalm-Grayling complex, 0 to 2 percent slopes

Graycalm

Extent: 45 to 80 percent of the unit
Landform(s): outwash plains, stream 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | loamy sand | rapid | 0.72 to 1.00 in | 5.1 to 6.5 |
| Bw -- 9 to 17 in | loamy sand | rapid | 0.39 to 0.87 in | 5.1 to 6.5 |
| E&Bt -- 17 to 80 in | sand | rapid | 3.78 to 5.04 in | 5.1 to 6.5 |

Grayling

Extent: 15 to 45 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- 8 to 47 in | sand | rapid | 1.95 to 4.29 in | 5.1 to 6.5 |
| BC -- 47 to 60 in | sand | rapid | 0.65 to 0.91 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C112B--Graycalm-Grayling complex, 2 to 8 percent slopes

Graycalm

Extent: 25 to 75 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 2 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | loamy sand | rapid | 0.72 to 1.00 in | 5.1 to 6.5 |
| Bw -- 9 to 17 in | loamy sand | rapid | 0.39 to 0.87 in | 5.1 to 6.5 |
| E&Bt -- 17 to 80 in | sand | rapid | 3.78 to 5.04 in | 5.1 to 6.5 |

Grayling

Extent: 15 to 40 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 2 to 8 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- 8 to 47 in | sand | rapid | 1.95 to 4.29 in | 5.1 to 6.5 |
| BC -- 47 to 60 in | sand | rapid | 0.65 to 0.91 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C112C--Graycalm-Grayling complex, 8 to 15 percent slopes

Graycalm

Extent: 30 to 70 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 8 to 15 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | loamy sand | rapid | 0.72 to 1.00 in | 5.1 to 6.5 |
| Bw -- 9 to 17 in | loamy sand | rapid | 0.39 to 0.87 in | 5.1 to 6.5 |
| E&Bt -- 17 to 80 in | sand | rapid | 3.78 to 5.04 in | 5.1 to 6.5 |

Grayling

Extent: 30 to 70 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 8 to 15 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- 8 to 47 in | sand | rapid | 1.95 to 4.29 in | 5.1 to 6.5 |
| BC -- 47 to 60 in | sand | rapid | 0.65 to 0.91 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C112E--Graycalm-Grayling complex, 15 to 30 percent slopes

Graycalm

Extent: 30 to 65 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 15 to 30 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| A -- 0 to 9 in | loamy sand | rapid | 0.72 to 1.00 in | 5.1 to 6.5 |
| Bw -- 9 to 17 in | loamy sand | rapid | 0.39 to 0.87 in | 5.1 to 6.5 |
| E&Bt -- 17 to 80 in | sand | rapid | 3.78 to 5.04 in | 5.1 to 6.5 |

Grayling

Extent: 35 to 70 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 15 to 30 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| A -- 0 to 8 in | loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- 8 to 47 in | sand | rapid | 1.95 to 4.29 in | 5.1 to 6.5 |
| BC -- 47 to 60 in | sand | rapid | 0.65 to 0.91 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C113A--Meehan loamy sand, 0 to 2 percent slopes

Meehan

Extent: 65 to 85 percent of the unit

Landform(s): outwash plains, stream terraces

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): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .24

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | loamy sand | rapid | 0.57 to 0.85 in | 5.1 to 6.5 |
| Bw -- 7 to 33 in | loamy sand | rapid | 1.30 to 2.86 in | 5.1 to 6.5 |
| C -- 33 to 60 in | sand | rapid | 1.34 to 1.87 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C116B--Mora, stony-Brennyville, stony-Cathro complex, pitted, 0 to 6 percent slopes

Mora, stony

Extent: 40 to 70 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Brennyville, stony

Extent: 15 to 30 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 6 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C116B--Mora, stony-Brennyville, stony-Cathro complex, pitted, 0 to 6 percent slopes

Cathro, milaca catena

Extent: 5 to 20 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

Representative soil profile:

| | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|--------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C117A--Cebana, stony-Annriver complex, 0 to 2 percent slopes

Cebana, stony

Extent: 50 to 75 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Annriver

Extent: 15 to 30 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 0 to 2 percent

Parent material: drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.63 to 2.17 in | 5.1 to 6.5 |
| Eg -- 9 to 14 in | silt loam | moderate | 0.82 to 1.13 in | 5.1 to 6.5 |
| Btg1 -- 14 to 21 in | silt loam | moderate | 1.07 to 1.47 in | 5.1 to 6.5 |
| 2Btg2 -- 21 to 31 in | loam | moderate | 0.92 to 1.84 in | 5.1 to 6.5 |
| 3C -- 31 to 80 in | gravelly coarse sand | very rapid | 0.49 to 2.93 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C118C--Chetek-Emmert complex, 8 to 15 percent slopes

Chetek

Extent: 30 to 50 percent of the unit

Landform(s): eskers, outwash plains, stream terraces

Slope gradient: 8 to 15 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Emmert

Extent: 25 to 40 percent of the unit

Landform(s): eskers, outwash plains, stream terraces

Slope gradient: 8 to 15 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated: 7s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 2 in | fine sandy loam | rapid | 0.16 to 0.24 in | 5.1 to 6.5 |
| E -- 2 to 12 in | gravelly loamy sand | rapid | 0.49 to 1.48 in | 5.1 to 6.5 |
| Bt -- 12 to 37 in | gravelly loamy coarse sand | rapid | 0.76 to 2.27 in | 5.1 to 6.5 |
| C -- 37 to 80 in | very gravelly coarse sand | very rapid | 0.43 to 2.57 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C119A--Brennyville, stony-Cebana, stony-Cathro complex, pitted, 0 to 3 percent slopes

Brennyville, wet, stony

Extent: 30 to 60 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 1 to 3 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Cathro, milaca catena

Extent: 10 to 20 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C119A--Brennyville, stony-Cebana, stony-Cathro complex, pitted, 0 to 3 percent slopes

Cebana, stony

Extent: 15 to 30 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C122E--Emmert-Chetek complex, 15 to 45 percent slopes

Emmert

Extent: 30 to 50 percent of the unit

Landform(s): eskers, outwash plains, stream terraces

Slope gradient: 15 to 45 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated: 7s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 2 in | fine sandy loam | rapid | 0.16 to 0.24 in | 5.1 to 6.5 |
| E -- 2 to 12 in | gravelly loamy sand | rapid | 0.49 to 1.48 in | 5.1 to 6.5 |
| Bt -- 12 to 37 in | gravelly loamy coarse sand | rapid | 0.76 to 2.27 in | 5.1 to 6.5 |
| C -- 37 to 80 in | very gravelly coarse sand | very rapid | 0.43 to 2.57 in | 5.1 to 6.5 |

Chetek

Extent: 30 to 40 percent of the unit

Landform(s): eskers, outwash plains, stream terraces

Slope gradient: 15 to 45 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): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C123B--Milaca, stony-Mora, stony-Cathro complex, pitted, 0 to 8 percent slopes

Milaca, stony

Extent: 50 to 75 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 3 to 8 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | fine sandy loam | moderately rapid | 1.27 to 1.63 in | 5.1 to 6.5 |
| E -- 9 to 13 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 13 to 43 in | fine sandy loam | moderately rapid | 2.99 to 4.49 in | 5.1 to 6.5 |
| BCd -- 43 to 80 in | fine sandy loam | very slow | 1.85 to 2.96 in | 5.6 to 7.3 |

Mora, stony

Extent: 15 to 30 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 3 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C123B--Milaca, stony-Mora, stony-Cathro complex, pitted, 0 to 8 percent slopes

Cathro, milaca catena

Extent: 10 to 20 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

Representative soil profile:

| | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|--------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C124A--Cebana, stony-Cathro complex, pitted, 0 to 2 percent slopes

Cebana, stony

Extent: 50 to 90 percent of the unit

Landform(s): moraines, interdrumlins

Slope gradient: 0 to 2 percent

Parent material: loamy mantled dense loamy till

Restrictive feature(s): densic material at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| Eg, E/B -- 8 to 27 in | silt loam | moderate | 3.28 to 4.24 in | 5.1 to 6.5 |
| 2Bt -- 27 to 49 in | loam | moderate | 1.95 to 3.90 in | 5.1 to 7.3 |
| 2BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Cathro, milaca catena

Extent: 10 to 35 percent of the unit

Landform(s): moraines, interdrumlins

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material over dense loamy till

Restrictive feature(s): densic material at 40 to 80 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Oa -- 0 to 31 in | muck | moderately rapid | 10.89 to 14.00 in | |
| A -- 31 to 37 in | loam | moderate | 1.18 to 1.42 in | 5.6 to 6.5 |
| BC -- 37 to 62 in | fine sandy loam | slow | 2.02 to 3.02 in | 5.6 to 7.3 |
| BCd -- 62 to 80 in | fine sandy loam | very slow | 0.89 to 1.42 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C125A--Hulligan loam, depressional, 0 to 1 percent slopes

Hulligan, depressional

Extent: 70 to 85 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 0 to 1 percent

Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

Representative soil profile:

| | | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|--------|-------------|----------------------|---------------------|---------------------------------|------------|
| A -- | 0 to 9 in | loam | moderate | 1.54 to 1.99 in | 5.1 to 6.5 |
| Bw -- | 9 to 17 in | loam | moderate | 0.79 to 1.50 in | 5.1 to 6.5 |
| Bg -- | 17 to 27 in | loam | moderate | 0.92 to 1.94 in | 5.1 to 6.5 |
| 2Cg -- | 27 to 60 in | gravelly coarse sand | very rapid | 0.33 to 1.96 in | 5.6 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C126B--Balmlake-Rosy complex, 1 to 6 percent slopes

Balmlake

Extent: 50 to 80 percent of the unit

Landform(s): lake plains

Slope gradient: 1 to 6 percent

Parent material: loamy glaciolacustrine 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): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .37

Land capability, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| Ap -- 0 to 10 in | very fine sandy loam | moderate | 1.57 to 2.17 in | 5.1 to 6.5 |
| B/E -- 10 to 15 in | loam | moderate | 0.41 to 0.97 in | 5.1 to 6.5 |
| Bt -- 15 to 41 in | loam | moderate | 1.82 to 5.72 in | 5.1 to 7.3 |
| 2BC,2C -- 41 to 80 in | stratified loamy very fine sand to silty clay loam | rapid | 3.12 to 8.57 in | 5.1 to 7.3 |

Rosy

Extent: 15 to 30 percent of the unit

Landform(s): lake plains

Slope gradient: 1 to 4 percent

Parent material: loamy glaciolacustrine deposits

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) .43

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | very fine sandy loam | moderate | 1.45 to 1.99 in | 5.1 to 6.5 |
| E -- 9 to 20 in | loamy very fine sand | moderately rapid | 0.99 to 2.09 in | 5.1 to 6.5 |
| Bt -- 20 to 54 in | loam | moderate | 2.71 to 7.45 in | 5.1 to 7.3 |
| 2C -- 54 to 80 in | stratified loamy very fine sand to silty clay loam | rapid | 2.08 to 5.72 in | 5.1 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C127A--Whited silt loam, 0 to 2 percent slopes

Whited

Extent: 70 to 90 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 0 to 2 percent

Parent material: glaciolacustrine mantled 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) .32

Land capability, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.73 to 1.89 in | 5.6 to 7.3 |
| E -- 8 to 12 in | silt loam | moderate | 0.67 to 0.87 in | 5.6 to 7.3 |
| E/B -- 12 to 17 in | silt loam | moderate | 0.56 to 1.13 in | 5.6 to 7.3 |
| Bt -- 17 to 42 in | silty clay | slow | 2.02 to 5.04 in | 5.6 to 7.8 |
| BCg -- 42 to 55 in | silty clay loam | moderately slow | 2.34 to 2.86 in | 5.6 to 7.8 |
| 2C -- 55 to 80 in | gravelly coarse sand | very rapid | 0.25 to 1.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C130B--Mora, stony-Chetek complex, 2 to 6 percent slopes

Mora, stony

Extent: 40 to 85 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 3 to 6 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .15

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- 8 to 12 in | fine sandy loam | moderately rapid | 0.43 to 0.75 in | 5.1 to 6.5 |
| B/E, Bt -- 12 to 36 in | fine sandy loam | moderately rapid | 2.40 to 4.56 in | 5.1 to 6.5 |
| BC -- 36 to 46 in | fine sandy loam | slow | 0.82 to 1.23 in | 5.6 to 7.3 |
| BCd -- 46 to 80 in | fine sandy loam | very slow | 1.69 to 2.71 in | 5.6 to 7.3 |

Chetek

Extent: 5 to 45 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 2 to 6 percent

Parent material: drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 5 in | fine sandy loam | moderately rapid | 0.72 to 0.92 in | 5.1 to 6.0 |
| E -- 5 to 12 in | fine sandy loam | moderately rapid | 0.67 to 1.14 in | 5.1 to 6.0 |
| Bt1 -- 12 to 18 in | sandy loam | moderately rapid | 0.57 to 1.20 in | 5.1 to 6.0 |
| 2Bt2 -- 18 to 25 in | gravelly loamy coarse sand | very rapid | 0.07 to 0.64 in | 5.1 to 6.5 |
| 2BC, 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C133A--Brennyville, stony-Scottlake complex, 0 to 3 percent slopes

Brennyville, wet, stony

Extent: 60 to 80 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 0 to 3 percent

Parent material: silt mantled dense loamy till

Restrictive feature(s): densic material at 40 to 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) .43

Land capability, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.50 to 1.89 in | 5.1 to 6.5 |
| B/E -- 8 to 11 in | silt loam | moderate | 0.63 to 0.69 in | 5.1 to 6.5 |
| Bt1 -- 11 to 21 in | silt loam | moderate | 1.67 to 2.17 in | 5.1 to 6.5 |
| 2Bt2, 2Bt3 -- 21 to 38 in | fine sandy loam | moderately rapid | 1.56 to 3.12 in | 5.1 to 7.3 |
| 2BC -- 38 to 45 in | fine sandy loam | slow | 0.54 to 0.80 in | 5.6 to 7.3 |
| 2BCd -- 45 to 80 in | fine sandy loam | very slow | 1.75 to 2.80 in | 5.6 to 7.3 |

Scott Lake

Extent: 15 to 30 percent of the unit

Landform(s): end moraines, moraines

Slope gradient: 0 to 3 percent

Parent material: drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| E -- 8 to 11 in | fine sandy loam | moderately rapid | 0.31 to 0.60 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | fine sandy loam | moderately rapid | 0.53 to 1.12 in | 5.1 to 6.5 |
| Bt -- 17 to 25 in | loam | moderate | 0.74 to 1.57 in | 5.1 to 6.5 |
| 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C133A--Brennyville, stony-Scottlake complex, 0 to 3 percent slopes

C134A--Rosy very fine sandy loam, 0 to 4 percent slopes

Rosy

Extent: 60 to 80 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 4 percent

Parent material: loamy glaciolacustrine

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) .43

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|--|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | very fine sandy loam | moderate | 1.45 to 1.99 in | 5.1 to 6.5 |
| E -- 9 to 20 in | loamy very fine sand | moderately rapid | 0.99 to 2.09 in | 5.1 to 6.5 |
| Bt -- 20 to 54 in | loam | moderate | 2.71 to 7.45 in | 5.1 to 7.3 |
| 2C -- 54 to 80 in | stratified loamy very fine sand to silty clay loam | moderately rapid | 2.08 to 5.72 in | 5.1 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C135A--Lewis Lake silt loam, 1 to 3 percent slopes

Lewis lake

Extent: 80 to 90 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 1 to 3 percent

Parent material: glaciolacustrine mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.6 to 7.3 |
| B/E -- 9 to 12 in | silty clay loam | moderately slow | 0.30 to 0.61 in | 5.6 to 7.3 |
| Bt -- 12 to 37 in | silty clay | slow | 2.02 to 5.04 in | 5.6 to 7.8 |
| 2BC, 2C -- 37 to 80 in | gravelly coarse sand | very rapid | 0.43 to 2.57 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C135B--Lewis Lake silt loam, 3 to 6 percent slopes

Lewis lake

Extent: 85 to 95 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 3 to 6 percent

Parent material: glaciolacustrine mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .43

Land capability, nonirrigated: 2e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.6 to 7.3 |
| B/E -- 9 to 12 in | silty clay loam | moderately slow | 0.30 to 0.61 in | 5.6 to 7.3 |
| Bt -- 12 to 37 in | silty clay | slow | 2.02 to 5.04 in | 5.6 to 7.8 |
| 2BC, 2C -- 37 to 80 in | gravelly coarse sand | very rapid | 0.43 to 2.57 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C135C2--Lewis Lake silt loam, 6 to 12 percent slopes, moderately eroded

Lewis lake, moderately eroded

Extent: 90 to 99 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 6 to 12 percent

Parent material: glaciolacustrine mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .43

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.6 to 7.3 |
| B/E -- 9 to 12 in | silty clay loam | moderately slow | 0.30 to 0.61 in | 5.6 to 7.3 |
| Bt -- 12 to 37 in | silty clay | slow | 2.02 to 5.04 in | 5.6 to 7.8 |
| 2BC, 2C -- 37 to 80 in | gravelly coarse sand | very rapid | 0.43 to 2.57 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C138B--Grasston-Scott Lake complex, 2 to 6 percent slopes

Grasston

Extent: 35 to 75 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material: silty glaciolacustrine

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) .37

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 14 in | silty clay loam | moderately slow | 0.56 to 1.13 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 14 to 42 in | silty clay | slow | 2.24 to 5.59 in | 5.1 to 7.3 |
| Bk -- 42 to 66 in | silt loam | moderate | 4.32 to 5.28 in | 7.4 to 8.4 |
| C -- 66 to 80 in | silty clay loam | moderately slow | 2.48 to 3.03 in | 7.4 to 8.4 |

Scott Lake

Extent: 15 to 30 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material: loamy mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| E -- 8 to 11 in | fine sandy loam | moderately rapid | 0.31 to 0.60 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | fine sandy loam | moderately rapid | 0.53 to 1.12 in | 5.1 to 6.5 |
| Bt -- 17 to 25 in | loam | moderate | 0.74 to 1.57 in | 5.1 to 6.5 |
| 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C138C2--Grasston-Scott Lake complex, 6 to 12 percent slopes, moderately eroded

Grasston, moderately eroded

Extent: 45 to 80 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material: silty glaciolacustrine

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) .43

Land capability, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 9 in | silt loam | moderate | 1.81 to 2.17 in | 5.1 to 7.3 |
| B/E -- 9 to 14 in | silty clay loam | moderately slow | 0.56 to 1.13 in | 5.1 to 7.3 |
| Bt1, Bt2 -- 14 to 42 in | silty clay | slow | 2.24 to 5.59 in | 5.1 to 7.3 |
| Bk -- 42 to 66 in | silt loam | moderate | 4.32 to 5.28 in | 7.4 to 8.4 |
| C -- 66 to 80 in | silty clay loam | moderately slow | 2.48 to 3.03 in | 7.4 to 8.4 |

Scott Lake, moderately eroded

Extent: 15 to 30 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material: loamy mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | loam | moderate | 1.18 to 1.50 in | 5.1 to 6.5 |
| E -- 8 to 11 in | fine sandy loam | moderately rapid | 0.31 to 0.60 in | 5.1 to 6.5 |
| B/E -- 11 to 17 in | fine sandy loam | moderately rapid | 0.53 to 1.12 in | 5.1 to 6.5 |
| Bt -- 17 to 25 in | loam | moderate | 0.74 to 1.57 in | 5.1 to 6.5 |
| 2C -- 25 to 80 in | gravelly coarse sand | very rapid | 0.55 to 3.28 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C139A--Minocqua silt loam, depressional, thick solum, 0 to 1 percent slopes

Minocqua, depressional

Extent: 70 to 95 percent of the unit

Landform(s): outwash plains, stream terraces

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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| A -- 0 to 8 in | silt loam | moderate | 1.65 to 1.89 in | 5.1 to 6.5 |
| Bg1 -- 8 to 23 in | silt loam | moderate | 2.39 to 3.29 in | 5.1 to 6.5 |
| 2Bg2 -- 23 to 50 in | sandy loam | moderate | 2.44 to 4.89 in | 5.1 to 6.5 |
| 3C -- 50 to 80 in | gravelly coarse sand | very rapid | 0.30 to 1.80 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C141C--Antigo-Rock outcrop complex, 3 to 15 percent slopes

Antigo

Extent: 25 to 75 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 3 to 15 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| A -- 0 to 4 in | silt loam | moderate | 0.71 to 0.87 in | 5.1 to 6.5 |
| E -- 4 to 12 in | silt loam | moderate | 1.50 to 1.73 in | 5.1 to 6.5 |
| B/E -- 12 to 18 in | silt loam | moderate | 1.20 to 1.39 in | 5.1 to 6.5 |
| 2Bt -- 18 to 30 in | fine sandy loam | moderate | 1.06 to 2.13 in | 5.1 to 6.5 |
| 3C -- 30 to 80 in | gravelly coarse sand | very rapid | 0.50 to 3.00 in | 5.1 to 6.5 |

Rock outcrop

Extent: 10 to 60 percent of the unit

Landform(s): outwash plains, stream terraces

Slope gradient: 3 to 15 percent

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:

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

Map Unit Description (MN)

Kanabec County, Minnesota

C142A--Annriver silt loam, 0 to 2 percent slopes, extremely stony

Annriver, extremely stony

Extent: 60 to 85 percent of the unit

Landform(s): outwash plains, stream terraces

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): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .05

Land capability, nonirrigated: 7s

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|---------------------------|---------------------|---------------------------------|------------|
| A -- 0 to 9 in | extremely stony silt loam | moderate | 1.63 to 2.17 in | 5.1 to 6.5 |
| Eg -- 9 to 14 in | silt loam | moderate | 0.82 to 1.13 in | 5.1 to 6.5 |
| Btg1 -- 14 to 21 in | silt loam | moderate | 1.07 to 1.47 in | 5.1 to 6.5 |
| 2Btg2 -- 21 to 31 in | loam | moderate | 0.92 to 1.84 in | 5.1 to 6.5 |
| 3C -- 31 to 80 in | gravelly coarse sand | very rapid | 0.49 to 2.93 in | 5.1 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C143B--Alban fine sandy loam, 1 to 8 percent slopes

Alban

Extent: 75 to 90 percent of the unit

Landform(s): lake plains

Slope gradient: 1 to 8 percent

Parent material: loamy glaciolacustrine

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): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated: 2e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

| <i>Representative soil profile:</i> | | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-------------|-----------------------------------|---------------------|---------------------------------|------------|
| Ap -- | 0 to 8 in | fine sandy loam | moderately rapid | 1.10 to 1.42 in | 5.1 to 6.5 |
| E -- | 8 to 20 in | loamy fine sand | rapid | 0.98 to 2.07 in | 4.5 to 6.5 |
| E/B, B/E -- | 20 to 44 in | loamy fine sand | moderately rapid | 1.92 to 5.28 in | 4.5 to 6.5 |
| C -- | 44 to 60 in | stratified silt loam to fine sand | rapid | 0.79 to 3.46 in | 4.5 to 6.5 |

Map Unit Description (MN)

Kanabec County, Minnesota

C144A--Coin silt loam, 0 to 2 percent slopes

Coin

Extent: 70 to 85 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 0 to 2 percent

Parent material: glaciolacustrine mantled outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .43

Land capability, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: moderate

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 8 in | silt loam | moderate | 1.57 to 1.89 in | 5.6 to 7.3 |
| E -- 8 to 13 in | silt loam | moderate | 0.87 to 1.13 in | 5.6 to 7.3 |
| B/E -- 13 to 19 in | silty clay loam | moderately slow | 0.65 to 1.30 in | 5.6 to 7.3 |
| Bt -- 19 to 38 in | silty clay | slow | 1.54 to 3.86 in | 5.6 to 7.8 |
| 2BC, 2C -- 38 to 80 in | gravelly coarse sand | very rapid | 0.42 to 2.50 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

C146A--Haybrook fine sandy loam, 0 to 2 percent slopes, stony

Haybrook, stony

Extent: 65 to 90 percent of the unit

Landform(s): drumlins, moraines

Slope gradient: 0 to 2 percent

Parent material: dense loamy till

Restrictive feature(s): densic material at 40 to 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) .20

Land capability, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|-----------------|---------------------|---------------------------------|------------|
| Ap -- 0 to 7 in | fine sandy loam | moderately rapid | 0.99 to 1.28 in | 5.1 to 6.5 |
| Eg -- 7 to 10 in | fine sandy loam | moderately rapid | 0.30 to 0.61 in | 5.1 to 6.5 |
| Btg, Bt -- 10 to 37 in | loam | moderate | 2.44 to 5.16 in | 5.1 to 6.5 |
| BC -- 37 to 49 in | fine sandy loam | slow | 0.94 to 1.42 in | 5.6 to 7.3 |
| BCd -- 49 to 80 in | fine sandy loam | very slow | 1.56 to 2.49 in | 5.6 to 7.3 |

Map Unit Description (MN)

Kanabec County, Minnesota

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 70 to 90 percent of the unit

Landform(s): moraines, stream terraces, outwash plains

Slope gradient: 0 to 45 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

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:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

Udipsamments

Extent: 10 to 30 percent of the unit

Landform(s): moraines, stream terraces, outwash plains

Slope gradient: 0 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

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:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

Map Unit Description (MN)

Kanabec County, Minnesota

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:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

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:

| | | | | |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|
| <i>Representative soil profile:</i> | <i>Texture</i> | <i>Permeability</i> | <i>Available water capacity</i> | <i>pH</i> |
|-------------------------------------|----------------|---------------------|---------------------------------|-----------|

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.