

## Map Unit Description (MN)

Pennington 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]

### B109A--Bowstring and Fluvaquents soils, des moines, 0 to 2 percent slopes, frequently flooded

#### Bowstring, mlra 88, frequently flooded

*Extent:* 45 percent of the unit

*Landform(s):* swales on flood plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* frequent

*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)* .02

*Land capability, nonirrigated* 6w

*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>
Oa1-2 -- 0 to 38 in	muck	moderately rapid	13.37 to 17.19 in	
Cg -- 38 to 47 in	stratified sand to fine sandy loam	rapid	0.69 to 1.21 in	
O'a1 -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

#### Fluvaquents, mlra 88, frequently flooded

*Extent:* 40 percent of the unit

*Landform(s):* flats on flood plains, swales on flood plains

*Slope gradient:* 0 to 2 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):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 6w

*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>
A -- 0 to 16 in	fine sandy loam	moderately rapid	2.58 to 3.87 in	6.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt loam	rapid	2.55 to 12.76 in	6.6 to 7.8

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### B200A--Garnes fine sandy loam, des moines, 0 to 3 percent slopes

#### Garnes

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits and/or till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C

*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 6 in	fine sandy loam	moderately rapid	0.94 to 1.06 in	6.1 to 7.3
E -- 6 to 9 in	loamy fine sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt -- 9 to 14 in	clay loam	moderate	0.87 to 1.02 in	6.6 to 7.8
Bk1-2 -- 14 to 72 in	loam	moderate	8.68 to 11.00 in	7.4 to 8.4
C -- 72 to 80 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4

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### B201A--Chilgren fine sandy loam, des moines, 0 to 2 percent slopes

#### Chilgren

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 2w

*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 4 in	fine sandy loam	moderately rapid	0.63 to 0.71 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	rapid	0.30 to 0.71 in	6.1 to 7.3
Btg -- 10 to 18 in	clay loam	moderate	1.41 to 1.65 in	6.1 to 7.8
Bkg1-2 -- 18 to 72 in	loam	moderate	8.09 to 10.25 in	7.4 to 8.4
Cg -- 72 to 80 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4

## Map Unit Description (MN)

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### B202A--Cathro muck, depressional, des moines, 0 to 1 percent slopes

#### Cathro, depressional, mlra 88

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*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)* .02

*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>
Oa1-Oa2 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa3 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

## Map Unit Description (MN)

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### B203A--Northwood muck, depressional, des moines, 0 to 1 percent slopes

#### Northwood, depressional, mlra 88

<p><i>Extent:</i> 75 percent of the unit</p> <p><i>Landform(s):</i> depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> organic material over glaciolacustrine deposits and/or till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated</i> 6w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 9 in	muck	moderately rapid	3.17 to 4.35 in	5.1 to 7.8
A -- 9 to 14 in	loamy fine sand	rapid	0.51 to 0.92 in	5.6 to 7.8
Bg1-2 -- 14 to 24 in	loamy fine sand	rapid	0.59 to 1.08 in	5.6 to 8.4
2BCkg-2Cg -- 24 to 80 in	loam	moderate	8.39 to 10.62 in	7.4 to 8.4

## Map Unit Description (MN)

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### B204A--Roliss loam, des moines, 0 to 2 percent slopes

#### Roliss, mlra 88

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2w

*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,A -- 0 to 14 in	loam	moderate	2.41 to 3.40 in	6.6 to 8.4
Bg -- 14 to 20 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
Cg1-4 -- 20 to 80 in	loam	moderate	8.98 to 11.37 in	7.4 to 8.4

## Map Unit Description (MN)

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### B205A--Berner muck, depressional, des moines, 0 to 1 percent slopes

#### Berner, depressional, mlra 88

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits and/or till

*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)* .02

*Land capability, nonirrigated* 6w

*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>
Oa1-2 -- 0 to 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

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### B206A--Hamre muck, depressional, des moines, 0 to 1 percent slopes

#### Hamre, depressional, mlra 88

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*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)* .02

*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 13 in	muck	moderately rapid	4.55 to 6.24 in	5.1 to 7.8
A -- 13 to 18 in	loam	moderate	0.87 to 1.13 in	5.1 to 7.8
Bg -- 18 to 35 in	loam	moderate	2.54 to 3.22 in	6.6 to 8.4
BCg-Cg -- 35 to 80 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

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### B207A--Pelan sandy loam, des moines, 0 to 3 percent slopes

#### Pelan

<p><i>Extent:</i> 70 percent of the unit</p> <p><i>Landform(s):</i> rises on lake plains</p> <p><i>Slope gradient:</i> 0 to 3 percent</p> <p><i>Parent material:</i> glaciolacustrine deposits over till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .24</p> <p><i>Land capability, nonirrigated</i> 3s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	6.1 to 7.3
E -- 6 to 9 in	sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt -- 9 to 14 in	very gravelly sandy loam	rapid	0.15 to 0.56 in	6.1 to 7.8
Bw -- 14 to 20 in	very gravelly coarse sand	rapid	0.12 to 0.41 in	7.4 to 8.4
2Bw -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

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### B208A--Grygla loamy fine sand, des moines, 0 to 2 percent slopes

#### Grygla

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* 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* 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 6 in	loamy fine sand	rapid	0.77 to 0.89 in	6.1 to 7.3
Bg -- 6 to 26 in	fine sand	rapid	1.20 to 2.21 in	6.6 to 7.8
2Bkg-2Cg -- 26 to 80 in	loam	moderate	8.09 to 10.25 in	7.4 to 8.4

### B209A--Seelyeville muck, depressional, des moines, 0 to 1 percent slopes

#### Seelyeville

*Extent:* 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* 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):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated* 6w

*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 4.72 in	
Oa2-Oa5 -- 10 to 80 in	muck	moderately rapid	24.53 to 33.64 in	

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### B210A--Eckvoll loamy fine sand, des moines, 0 to 3 percent slopes

#### Eckvoll

<p><i>Extent:</i> 70 percent of the unit</p> <p><i>Landform(s):</i> rises on lake plains</p> <p><i>Slope gradient:</i> 0 to 3 percent</p> <p><i>Parent material:</i> glaciolacustrine deposits over till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .28</p> <p><i>Land capability, nonirrigated</i> 3s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> moderate</p>
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<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 fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
E1-2 -- 9 to 25 in	fine sand	rapid	0.81 to 1.94 in	6.1 to 7.3
2Bt -- 25 to 32 in	sandy clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2BCk-2C1-2 -- 32 to 80 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4

## Map Unit Description (MN)

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### B211A--Berner and Cathro soils, ponded, des moines, 0 to 1 percent slopes

#### Berner, Ponded

*Extent:* 0 to 90 percent of the unit  
*Landform(s):* depressions on lake plains  
*Slope gradient:* 0 to 1 percent  
*Parent material:* organic material over glaciolacustrine deposits and/or till  
*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>
Oa1-2 -- 0 to 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

#### Cathro, Ponded

*Extent:* 0 to 90 percent of the unit  
*Landform(s):* depressions on lake plains  
*Slope gradient:* 0 to 1 percent  
*Parent material:* organic material over till  
*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>
Oa1-Oa2 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa3 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

## Map Unit Description (MN)

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### I1A--Augsburg loam, 0 to 2 percent slopes

#### Augsburg

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* coarse-silty glaciolacustrine deposits over clayey till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .37

*Land capability, nonirrigated* 2w

*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	loam		moderate	1.42 to 1.63 in	7.4 to 8.4
Ak --	7 to 11 in	loam		moderate	0.79 to 0.91 in	7.4 to 8.4
Bkg --	11 to 18 in	very fine sandy loam		moderately rapid	1.20 to 1.56 in	7.4 to 8.4
Bg1 --	18 to 33 in	loamy very fine sand		moderately rapid	2.54 to 3.29 in	7.4 to 8.4
2Bg2 --	33 to 60 in	clay		slow	2.41 to 5.09 in	7.4 to 8.4

## Map Unit Description (MN)

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### I3A--Berner muck, 0 to 1 percent slopes

#### Berner

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits and/or till

*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)* .02

*Land capability, nonirrigated* 6w

*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 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	6.1 to 7.3
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	6.1 to 7.8
2CBkg -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

## Map Unit Description (MN)

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### I4A--Berner, Rosewood, and Strathcona soils, seepy, 0 to 2 percent slopes

#### Rosewood, seepy, depressional

*Extent:* 0 to 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits

*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):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 6w

*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>
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.57 to 2.36 in	7.4 to 8.4
Bkg1 -- 8 to 18 in	fine sandy loam	moderately rapid	0.92 to 1.74 in	7.4 to 8.4
Cg -- 18 to 80 in	fine sand	rapid	3.09 to 4.94 in	7.4 to 8.4

#### Strathcona, seepy, depressional

*Extent:* 0 to 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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>
Ap -- 0 to 10 in	mucky fine sandy loam	rapid	1.97 to 2.95 in	7.4 to 8.4
Bkg -- 10 to 17 in	loamy fine sand	moderately rapid	0.64 to 1.20 in	7.4 to 8.4
Cg1 -- 17 to 28 in	fine sand	rapid	0.55 to 1.32 in	7.4 to 8.4
2Cg2 -- 28 to 80 in	loam	moderate	7.80 to 9.87 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I4A--Berner, Rosewood, and Strathcona soils, seepy, 0 to 2 percent slopes

#### Berner, seepy

*Extent:* 0 to 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits and/or till

*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)* .02

*Land capability, nonirrigated* 6w

*Hydric soil:* yes

*Hydrologic group:* A/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 28 in	muck	moderately rapid	9.78 to 13.42 in	
A --	28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	6.1 to 7.3
Bg --	31 to 44 in	sand	rapid	0.65 to 1.30 in	6.1 to 7.8
2CBkg --	44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I5A--Borup loam, 0 to 2 percent slopes

#### Borup

*Extent:* 75 percent of the unit

*Landform(s):* deltas on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* coarse-silty glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* 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>
Ap -- 0 to 12 in	loam	moderately rapid	2.13 to 2.60 in	7.4 to 8.4
Bkg -- 12 to 34 in	loam	moderately rapid	3.75 to 4.41 in	7.4 to 8.4
Cg -- 34 to 60 in	very fine sandy loam	rapid	3.90 to 4.94 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### 17A--Bowstring-Fluvaquents complex, 0 to 2 percent slopes, frequently flooded

#### Bowstring, frequently flooded

<p><i>Extent:</i> 45 percent of the unit</p> <p><i>Landform(s):</i> swales on flood plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> organic material over alluvium</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> frequent</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated</i> 6w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> A/D</p> <p><i>Potential for frost action:</i> high</p>
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<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 sand to fine sandy loam	rapid	0.69 to 1.21 in	
O'a -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

#### Fluvaquents, frequently flooded

<p><i>Extent:</i> 45 percent of the unit</p> <p><i>Landform(s):</i> flats on flood plains, swales on flood plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> alluvium</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> frequent</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .15</p> <p><i>Land capability, nonirrigated</i> 6w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> A/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 16 in	fine sandy loam	moderately rapid	2.58 to 3.87 in	6.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt loam	rapid	2.55 to 12.76 in	6.6 to 7.8

## Map Unit Description (MN)

Pennington County, Minnesota

### I8A--Cathro muck, 0 to 1 percent slopes

#### Cathro

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*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)* .02

*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>
Oa1 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa2 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

### I9A--Clearwater clay, 0 to 2 percent slopes

#### Clearwater

*Extent:* 80 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 2w

*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	clay	slow	1.02 to 1.34 in	6.6 to 7.8
Bss -- 8 to 35 in	clay	slow	2.72 to 5.16 in	7.4 to 8.4
Cg -- 35 to 80 in	clay	slow	4.04 to 8.53 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I11A--Deerwood muck, 0 to 1 percent slopes

#### Deerwood

*Extent:* 85 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits

*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)* .02

*Land capability, nonirrigated* 6w

*Hydric soil:* yes

*Hydrologic group:* A/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 10 in	muck	moderately rapid	3.44 to 4.72 in	5.6 to 7.8
A --	10 to 12 in	loamy sand	rapid	0.18 to 0.33 in	6.1 to 8.4
Cg --	12 to 60 in	sand	rapid	0.96 to 4.80 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I12A--Eckvoll loamy fine sand, 0 to 3 percent slopes

#### Eckvoll

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3s

*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 9 in	loamy fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
E -- 9 to 25 in	fine sand	rapid	0.81 to 1.94 in	6.1 to 7.3
2Bt -- 25 to 32 in	sandy clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2Bck -- 32 to 80 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I13A--Espelie fine sandy loam, 0 to 2 percent slopes

#### Espelie

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 2w

*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 9 in	fine sandy loam	moderately rapid	1.18 to 1.63 in	6.6 to 7.3
Bw -- 9 to 24 in	fine sand	rapid	0.90 to 1.65 in	6.6 to 7.8
2Bg -- 24 to 37 in	clay	slow	1.17 to 2.47 in	7.4 to 8.4
2Cg -- 37 to 80 in	clay	slow	3.86 to 8.15 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I15A--Flaming loamy fine sand, 0 to 3 percent slopes

#### Flaming

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* sandy 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):* 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:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loamy fine sand	rapid	1.18 to 1.42 in	5.6 to 7.3
BA -- 12 to 17 in	fine sand	rapid	0.31 to 0.61 in	5.6 to 8.4
Bw -- 17 to 27 in	fine sand	rapid	0.51 to 1.23 in	5.6 to 8.4
C -- 27 to 60 in	fine sand	rapid	1.63 to 3.27 in	5.6 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I16F--Fluvaquents, frequently flooded-Hapludolls complex, 0 to 30 percent slopes

#### Fluvaquents, frequently flooded

*Extent:* 55 percent of the unit

*Landform(s):* flats on flood plains, swales on flood plains

*Slope gradient:* 0 to 2 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):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 6w

*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>
A -- 0 to 16 in	fine sandy loam	moderately rapid	2.58 to 3.87 in	6.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt loam	rapid	2.55 to 12.76 in	6.6 to 7.8

#### Hapludolls, rarely flooded

*Extent:* 25 percent of the unit

*Landform(s):* escarpments on flood plains

*Slope gradient:* 2 to 30 percent

*Parent material:* glaciolacustrine deposits and/or till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* rare

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<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	6.6 to 7.8
C -- 9 to 60 in	loam	moderate	7.11 to 11.17 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I17A--Foldahl fine sandy loam, 0 to 3 percent slopes

#### Foldahl

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*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 12 in	fine sandy loam	moderately rapid	1.65 to 2.13 in	6.1 to 7.8
Bw -- 12 to 30 in	fine sand	rapid	1.27 to 2.17 in	6.6 to 7.8
2BCK -- 30 to 44 in	loam	moderate	2.13 to 2.69 in	7.4 to 8.4
2C -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I18A--Foldahl loamy fine sand, 0 to 3 percent slopes

#### Foldahl

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 3s

*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 12 in	loamy fine sand	rapid	1.18 to 1.65 in	6.1 to 7.8
Bw -- 12 to 30 in	fine sand	rapid	1.27 to 2.17 in	6.6 to 7.8
2Bck -- 30 to 44 in	loam	moderate	2.13 to 2.69 in	7.4 to 8.4
2C -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I19A--Foxhome sandy loam, 0 to 3 percent slopes

#### Foxhome

*Extent:* 65 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 3e

*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	sandy loam	moderately rapid	1.28 to 1.48 in	6.6 to 7.8
Bw1 -- 10 to 15 in	sand	rapid	0.31 to 0.46 in	6.6 to 7.8
2Bw2 -- 15 to 23 in	very gravelly coarse sand	rapid	0.16 to 0.55 in	7.4 to 8.4
3C -- 23 to 80 in	loam	moderate	8.56 to 10.85 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I20A--Foxlake loam, 0 to 2 percent slopes

#### Foxlake

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*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 10 in	loam	moderately rapid	1.97 to 2.17 in	6.6 to 7.8
A -- 10 to 19 in	loam	moderately rapid	1.81 to 1.99 in	6.6 to 7.8
Bg -- 19 to 38 in	silty clay	slow	1.74 to 3.67 in	7.4 to 8.4
Bkg -- 38 to 49 in	silty clay	slow	0.96 to 2.02 in	7.4 to 8.4
Cg -- 49 to 80 in	silty clay	slow	2.80 to 5.91 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I22A--Glyndon loam, 0 to 2 percent slopes

#### Glyndon

<i>Extent:</i> 75 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on delta plains	<i>Wind erodibility group (WEG):</i> 4L
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> coarse-silty glaciolacustrine deposits	<i>Kw factor (surface layer)</i> .24
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> C
<i>Drainage class:</i> somewhat 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>
Ap -- 0 to 11 in	loam	moderate	1.98 to 2.43 in	7.4 to 8.4
Bk -- 11 to 28 in	loam	moderately rapid	2.37 to 3.72 in	7.4 to 8.4
C -- 28 to 60 in	loamy very fine sand	moderately rapid	2.23 to 6.38 in	7.4 to 8.4

### I24A--Grimstad fine sandy loam, 0 to 3 percent slopes

#### Grimstad

<i>Extent:</i> 70 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> rises on lake plains	<i>Wind erodibility group (WEG):</i> 3
<i>Slope gradient:</i> 0 to 3 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> glaciolacustrine deposits over till	<i>Kw factor (surface layer)</i> .20
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B/D
<i>Drainage class:</i> somewhat 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>
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	7.4 to 8.4
Bk -- 9 to 22 in	loamy fine sand	rapid	1.17 to 2.21 in	7.4 to 8.4
C1 -- 22 to 28 in	fine sand	rapid	0.30 to 0.83 in	7.4 to 8.4
2C2 -- 28 to 60 in	loam	moderate	4.78 to 6.06 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I25A--Hamar loamy fine sand, 0 to 2 percent slopes

#### Hamar

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 3w

*Hydric soil:* yes

*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 15 in	loamy fine sand	rapid	1.50 to 1.80 in	6.1 to 7.8
AC -- 15 to 23 in	fine sand	rapid	0.79 to 0.94 in	6.6 to 8.4
C -- 23 to 60 in	fine sand	rapid	2.22 to 2.96 in	6.6 to 8.4

### I26A--Hamerly loam, 0 to 2 percent slopes

#### Hamerly

*Extent:* 75 percent of the unit

*Landform(s):* flats on till plains

*Slope gradient:* 0 to 2 percent

*Parent material:* fine-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):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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	loam	moderate	1.42 to 1.89 in	6.6 to 8.4
Bk -- 8 to 35 in	loam	moderate	4.07 to 5.16 in	7.4 to 8.4
C -- 35 to 60 in	loam	moderate	3.47 to 4.71 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I27A--Hamre muck, 0 to 1 percent slopes

#### Hamre

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*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)* .02

*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>
Oa -- 0 to 13 in	muck	moderately rapid	4.55 to 6.24 in	5.1 to 7.8
A -- 13 to 18 in	loam	moderate	0.87 to 1.13 in	5.1 to 7.8
Bg -- 18 to 71 in	loam	moderate	7.91 to 10.02 in	6.6 to 8.4
Cg -- 71 to 80 in	loam	moderate	1.36 to 1.72 in	7.4 to 8.4

### I32A--Hilaire fine sandy loam, 0 to 3 percent slopes

#### Hilaire

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 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)* .24

*Land capability, nonirrigated* 2s

*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	fine sandy loam	moderately rapid	1.28 to 1.77 in	6.6 to 7.3
Bw -- 10 to 34 in	fine sand	rapid	1.68 to 2.64 in	6.6 to 7.8
2Bk -- 34 to 80 in	clay	slow	4.15 to 8.75 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I34A--Huot fine sandy loam, 0 to 3 percent slopes

#### Huot

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 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)* .20

*Land capability, nonirrigated* 2s

*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	fine sandy loam	moderately rapid	1.28 to 1.77 in	7.4 to 8.4
Ak -- 10 to 14 in	fine sandy loam	moderately rapid	0.56 to 0.78 in	7.4 to 8.4
Bk -- 14 to 26 in	loamy fine sand	moderately rapid	1.06 to 2.01 in	7.4 to 8.4
C1 -- 26 to 34 in	fine sand	rapid	0.47 to 0.87 in	7.4 to 8.4
2C2 -- 34 to 80 in	clay	slow	4.15 to 8.75 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I36A--Kittson loam, 0 to 3 percent slopes

#### Kittson

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 1

*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 10 in	loam	moderate	1.97 to 2.17 in	6.6 to 7.8
Bw -- 10 to 17 in	fine sandy loam	moderate	0.85 to 1.35 in	6.6 to 7.8
2Bk -- 17 to 36 in	loam	moderate	2.83 to 3.59 in	7.4 to 8.4
2C -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I38A--Kratka fine sandy loam, 0 to 2 percent slopes

#### Kratka

*Extent:* 70 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 2w

*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 11 in	fine sandy loam	moderately rapid	1.76 to 1.98 in	5.6 to 7.8
Bg -- 11 to 18 in	loamy fine sand	rapid	0.43 to 0.78 in	5.6 to 7.8
Cg1 -- 18 to 25 in	fine sand	rapid	0.43 to 0.85 in	6.6 to 7.8
2Cg2 -- 25 to 80 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I39A--Linveldt fine sandy loam, 0 to 3 percent slopes

#### Linveldt

*Extent:* 65 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*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 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	6.6 to 7.8
Bt -- 9 to 16 in	loam	moderately rapid	0.85 to 1.28 in	6.6 to 7.8
2Bw -- 16 to 29 in	sand	rapid	0.65 to 1.43 in	7.4 to 8.4
3Bk -- 29 to 45 in	loam	moderate	2.36 to 2.99 in	7.4 to 8.4
3C -- 45 to 80 in	loam	moderate	4.91 to 6.66 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I41A--Markey muck, 0 to 1 percent slopes

#### Markey

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits

*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)* .02

*Land capability, nonirrigated* 6w

*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 32 in	muck	moderately rapid	11.16 to 14.35 in	
Cg -- 32 to 60 in	fine sand	rapid	0.84 to 2.80 in	5.6 to 8.4

### I42A--Markey muck, ponded, 0 to 1 percent slopes

#### Markey, ponded

*Extent:* 85 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits

*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 32 in	muck	moderately rapid	11.16 to 14.35 in	6.1 to 7.8
Cg -- 32 to 60 in	fine sand	rapid	0.84 to 2.24 in	

## Map Unit Description (MN)

Pennington County, Minnesota

### I43A--Mavie fine sandy loam, 0 to 2 percent slopes

#### Mavie

*Extent:* 70 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 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 12 in	fine sandy loam	moderately rapid	1.89 to 2.13 in	7.4 to 8.4
Bk -- 12 to 18 in	sandy loam	moderate	0.76 to 1.20 in	7.9 to 8.4
2C1 -- 18 to 39 in	very gravelly coarse sand	rapid	0.63 to 1.25 in	7.4 to 8.4
3C2 -- 39 to 80 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I44A--Newfolden loam, 0 to 3 percent slopes

#### Newfolden

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*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 7 in	loam	moderate	1.42 to 1.56 in	6.6 to 7.3
Bt -- 7 to 16 in	clay	slow	0.91 to 1.72 in	6.6 to 7.3
2Bk -- 16 to 36 in	clay loam	moderate	2.95 to 3.74 in	7.4 to 8.4
2CBk -- 36 to 80 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I45A--Northwood muck, 0 to 1 percent slopes

#### Northwood

*Extent:* 75 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits and/or till

*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)* .02

*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 9 in	muck	moderately rapid	3.17 to 4.35 in	5.1 to 7.8
A -- 9 to 14 in	loamy fine sand	rapid	0.51 to 0.92 in	5.6 to 7.8
Bg -- 14 to 24 in	fine sand	rapid	0.59 to 1.08 in	5.6 to 8.4
2BCkg -- 24 to 80 in	loam	moderate	8.39 to 10.62 in	7.4 to 8.4

### I46A--Pits, gravel and sand

#### Pits

*Extent:* 85 percent of the unit

*Landform(s):* beach ridges, beach plains, lake plains

*Slope gradient:*

*Parent material:* beach deposits

*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>
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## Map Unit Description (MN)

Pennington County, Minnesota

### I47A--Poppleton fine sand, 0 to 2 percent slopes

#### Poppleton

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* 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):* 1

*Wind erodibility index (WEI):* 250

*Kw factor (surface layer)* .02

*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 6 in	fine sand	rapid	0.35 to 0.53 in	5.6 to 7.3
E -- 6 to 9 in	fine sand	rapid	0.16 to 0.22 in	6.1 to 7.8
Bw -- 9 to 40 in	fine sand	rapid	1.56 to 2.18 in	6.1 to 7.8
C -- 40 to 60 in	fine sand	rapid	0.98 to 1.38 in	6.1 to 7.8

## Map Unit Description (MN)

Pennington County, Minnesota

### I48A--Radium loamy sand, 0 to 3 percent slopes

#### Radium

*Extent:* 75 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* beach 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):* 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:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 14 in	loamy sand	rapid	0.85 to 1.70 in	6.1 to 7.8
Bw -- 14 to 33 in	sand	rapid	0.57 to 1.51 in	6.6 to 8.4
C1 -- 33 to 43 in	gravelly coarse sand	very rapid	0.20 to 0.49 in	7.4 to 8.4
C2 -- 43 to 80 in	sand	rapid	1.11 to 3.33 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I50A--Reiner fine sandy loam, 0 to 3 percent slopes

#### Reiner

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 1

*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 7 in	fine sandy loam	moderately rapid	1.13 to 1.28 in	6.6 to 7.3
Bt -- 7 to 17 in	clay loam	moderate	1.48 to 1.87 in	6.6 to 7.3
Bw -- 17 to 21 in	loam	moderate	0.59 to 0.75 in	7.4 to 8.4
Bk -- 21 to 35 in	loam	moderate	2.13 to 2.69 in	7.4 to 8.4
C -- 35 to 80 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I51A--Reiner loamy fine sand, 0 to 3 percent slopes

#### Reiner

*Extent:* 65 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .24

*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 7 in	loamy fine sand	rapid	0.71 to 0.92 in	6.6 to 7.3
Bt -- 7 to 17 in	clay loam	moderate	1.48 to 1.87 in	6.6 to 7.3
Bw -- 17 to 21 in	loam	moderate	0.59 to 0.75 in	7.4 to 8.4
Bk -- 21 to 35 in	loam	moderate	2.13 to 2.69 in	7.4 to 8.4
C -- 35 to 80 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I52A--Reis-Clearwater complex, 0 to 2 percent slopes

#### Reis

*Extent:* 55 percent of the unit

*Landform(s):* flats on lake plains, rises on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .15

*Land capability, nonirrigated* 2w

*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 9 in	clay	slow	1.18 to 1.54 in	7.4 to 8.4
A/Bk -- 9 to 17 in	clay	slow	1.02 to 1.34 in	7.4 to 8.4
Bkss -- 17 to 33 in	clay	slow	2.10 to 2.74 in	7.4 to 8.4
Bkg -- 33 to 42 in	clay	slow	0.91 to 1.45 in	7.4 to 8.4
Cg -- 42 to 60 in	clay	slow	1.59 to 3.37 in	7.4 to 8.4
C -- 60 to 80 in	clay	slow	1.81 to 3.81 in	7.4 to 8.4

#### Clearwater

*Extent:* 30 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 2w

*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	clay	slow	1.02 to 1.34 in	6.6 to 7.8
Bss -- 8 to 35 in	clay	slow	2.72 to 5.16 in	7.4 to 8.4
Cg -- 35 to 80 in	clay	slow	4.04 to 8.53 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I53A--Roliss loam, 0 to 2 percent slopes

#### Roliss

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2w

*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	loam	moderate	1.54 to 2.17 in	6.6 to 8.4
A -- 9 to 14 in	loam	moderate	0.87 to 1.23 in	6.6 to 8.4
Bg -- 14 to 20 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
Cg -- 20 to 80 in	loam	moderate	8.98 to 11.37 in	7.4 to 8.4

### I54A--Roliss loam, depressional, 0 to 1 percent slopes

#### Roliss, depressional

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*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>
A -- 0 to 14 in	loam	moderate	2.83 to 3.54 in	6.6 to 8.4
Bg -- 14 to 20 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
Cg -- 20 to 80 in	loam	moderate	8.98 to 11.37 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I55A--Rosewood fine sandy loam, 0 to 2 percent slopes

#### Rosewood

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 3w

*Hydric soil:* yes

*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 8 in	fine sandy loam	moderately rapid	1.26 to 1.42 in	7.4 to 8.4
Bkg -- 8 to 18 in	fine sandy loam	moderately rapid	0.92 to 1.74 in	7.4 to 8.4
Cg -- 18 to 80 in	fine sand	rapid	3.09 to 4.94 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I57B--Sandberg-Radium complex, 1 to 6 percent slopes

#### Sandberg

*Extent:* 50 percent of the unit

*Landform(s):* beach ridges on lake plains

*Slope gradient:* 1 to 6 percent

*Parent material:* beach deposits

*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)* .15

*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	0.79 to 0.94 in	5.6 to 7.8
A -- 8 to 12 in	loamy sand	rapid	0.39 to 0.47 in	5.6 to 7.8
Bw -- 12 to 19 in	gravelly loamy coarse sand	rapid	0.21 to 0.71 in	6.1 to 7.8
Bk -- 19 to 29 in	gravelly coarse sand	very rapid	0.20 to 0.61 in	7.4 to 8.4
C -- 29 to 80 in	gravelly coarse sand	very rapid	1.02 to 2.03 in	7.4 to 8.4

#### Radium

*Extent:* 25 percent of the unit

*Landform(s):* beach ridges on lake plains

*Slope gradient:* 1 to 3 percent

*Parent material:* beach 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):* 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:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 14 in	loamy sand	rapid	0.85 to 1.70 in	6.1 to 7.8
Bw -- 14 to 33 in	sand	rapid	0.57 to 1.51 in	6.6 to 8.4
C1 -- 33 to 43 in	very gravelly coarse sand	very rapid	0.20 to 0.49 in	7.4 to 8.4
C2 -- 43 to 80 in	sand	rapid	1.11 to 3.33 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I58A--Seelyeville muck, 0 to 1 percent slopes

#### Seelyeville

*Extent:* 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* 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):* 2

*Wind erodibility index (WEI):* 134

*Kw factor (surface layer)* .02

*Land capability, nonirrigated* 6w

*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 4.72 in	
Oa2 -- 10 to 80 in	muck	moderately rapid	24.53 to 33.64 in	

### I59A--Smiley loam, 0 to 2 percent slopes

#### Smiley

*Extent:* 65 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loam	moderate	2.36 to 2.83 in	6.6 to 7.8
Btg -- 12 to 19 in	clay loam	moderate	1.06 to 1.35 in	6.6 to 8.4
Bkg -- 19 to 42 in	loam	moderate	3.48 to 4.41 in	7.4 to 8.4
Cg -- 42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I60A--Smiley mucky loam, depressional, 0 to 1 percent slopes

#### Smiley, depressional

*Extent:* 80 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 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>
Ap -- 0 to 12 in	mucky loam	moderate	2.36 to 3.54 in	6.6 to 7.8
Btg -- 12 to 19 in	clay loam	moderate	1.06 to 1.35 in	6.6 to 8.4
Bkg -- 19 to 42 in	loam	moderate	3.48 to 4.41 in	7.4 to 8.4
Cg -- 42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

### I61A--Strandquist loam, 0 to 2 percent slopes

#### Strandquist

*Extent:* 70 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 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 10 in	loam	moderately rapid	1.97 to 2.17 in	6.6 to 8.4
2Bg -- 10 to 20 in	very gravelly sand	rapid	0.20 to 0.72 in	7.4 to 8.4
3BCg -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I62A--Syrene sandy loam, 0 to 2 percent slopes

#### Syrene

*Extent:* 70 percent of the unit

*Landform(s):* flats on beach plains, swales on beach plains

*Slope gradient:* 0 to 2 percent

*Parent material:* beach deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 4w

*Hydric soil:* yes

*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	sandy loam	moderate	1.18 to 1.36 in	7.4 to 8.4
Bkg1 -- 9 to 17 in	sandy loam	moderately rapid	0.94 to 1.50 in	7.9 to 8.4
2Bkg2 -- 17 to 27 in	stratified gravelly coarse sand to loamy fine sand	rapid	0.20 to 0.41 in	7.4 to 8.4
2Cg -- 27 to 60 in	stratified gravelly coarse sand to loamy fine sand	rapid	0.65 to 1.31 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I63A--Thiefriever fine sandy loam, 0 to 2 percent slopes

#### Thiefriever

*Extent:* 70 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 2w

*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 12 in	fine sandy loam	moderately rapid	1.54 to 2.13 in	7.4 to 8.4
Bkg -- 12 to 23 in	loamy fine sand	moderately rapid	0.99 to 1.87 in	7.4 to 8.4
Cg1 -- 23 to 32 in	fine sand	rapid	0.54 to 1.00 in	7.4 to 8.4
2Cg -- 32 to 80 in	clay	slow	4.32 to 9.13 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I64A--Ulen fine sandy loam, 0 to 3 percent slopes

#### Ulen

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 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	rapid	1.27 to 1.63 in	7.4 to 8.4
Ak -- 9 to 13 in	loamy fine sand	rapid	0.31 to 0.67 in	7.4 to 8.4
Bk -- 13 to 42 in	loamy fine sand	rapid	1.46 to 3.79 in	7.9 to 8.4
Cg -- 42 to 60 in	fine sand	rapid	0.89 to 1.42 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I65A--Ulen loamy fine sand, 0 to 3 percent slopes

#### Ulen

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits

*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)* .17

*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	loamy fine sand	rapid	0.81 to 1.18 in	7.4 to 8.4
Ak -- 9 to 13 in	loamy fine sand	rapid	0.28 to 0.51 in	7.4 to 8.4
Bk -- 13 to 42 in	loamy fine sand	rapid	1.46 to 3.79 in	7.9 to 8.4
Cg -- 42 to 60 in	fine sand	rapid	0.89 to 1.42 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I66A--Vallers loam, 0 to 2 percent slopes

#### Vallers

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<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	1.63 to 1.99 in	6.6 to 8.4
Bkg -- 9 to 22 in	clay loam	moderately slow	1.82 to 2.60 in	7.4 to 8.4
Bkyg -- 22 to 44 in	clay loam	moderately slow	3.09 to 4.41 in	7.4 to 8.4
BCyg -- 44 to 60 in	clay loam	moderately slow	2.05 to 2.99 in	7.4 to 8.4

### I67A--Wheatville loam, 0 to 3 percent slopes

#### Wheatville

*Extent:* 70 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .43

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*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 9 in	loam	moderate	1.81 to 2.08 in	7.4 to 8.4
Bk -- 9 to 31 in	very fine sandy loam	moderately rapid	3.75 to 4.85 in	7.4 to 8.4
2C -- 31 to 80 in	clay	slow	4.39 to 9.28 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I69A--Wyandotte clay loam, 0 to 2 percent slopes

#### Wyandotte

*Extent:* 65 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 4

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 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	clay loam	moderate	1.10 to 1.50 in	7.4 to 7.8
Bk -- 8 to 15 in	sandy clay loam	moderate	0.99 to 1.28 in	7.9 to 8.4
2C -- 15 to 34 in	very gravelly loamy coarse sand	rapid	0.38 to 1.32 in	7.4 to 8.4
3Cg -- 34 to 60 in	clay	slow	2.34 to 4.94 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I70A--Strathcona fine sandy loam, 0 to 2 percent slopes

#### Strathcona

*Extent:* 70 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly 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* 2w

*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 10 in	fine sandy loam	rapid	1.28 to 1.77 in	7.4 to 8.4
Bkg -- 10 to 17 in	fine sandy loam	moderately rapid	0.64 to 1.20 in	7.4 to 8.4
Cg1 -- 17 to 28 in	fine sand	rapid	0.55 to 1.32 in	7.4 to 8.4
2Cg2 -- 28 to 80 in	loam	moderate	7.80 to 9.87 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I71A--Berner and Cathro soils, ponded, mlra 56, 0 to 1 percent slopes

#### Berner, Ponded

*Extent:* 0 to 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over glaciolacustrine deposits and/or till

*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 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg -- 44 to 60 in	loam	moderate	2.36 to 2.99 in	7.4 to 8.4

#### Cathro, ponded

*Extent:* 0 to 90 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* organic material over till

*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>
Oa1 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa2 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I72A--Pelan sandy loam, mlra 56, 0 to 3 percent slopes

#### Pelan

*Extent:* 65 percent of the unit

*Landform(s):* rises on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* glaciolacustrine deposits over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*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 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	6.1 to 7.3
E -- 6 to 9 in	sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt -- 9 to 14 in	very gravelly sandy loam	rapid	0.15 to 0.56 in	6.1 to 7.8
Bw -- 14 to 20 in	very gravelly coarse sand	rapid	0.12 to 0.41 in	7.4 to 8.4
2Bw -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I73A--Boash clay loam, 0 to 2 percent slopes

#### Boash

*Extent:* 75 percent of the unit

*Landform(s):* flats on lake plains, swales on lake plains

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* occasional

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* 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 9 in	clay loam	slow	1.54 to 1.72 in	6.6 to 7.8
Bg -- 9 to 29 in	clay	slow	2.01 to 3.81 in	6.6 to 8.4
2Cg -- 29 to 80 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I74A--Urban land-Endoquents complex, 0 to 3 percent slopes

#### Urban land

*Extent:* 40 to 90 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 0 to 3 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>
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#### Endoquents

*Extent:* 10 to 60 percent of the unit

*Landform(s):* till-floored lake plains on lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* loamy glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*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 4 in	loam	moderate	0.79 to 0.87 in	7.4 to 8.4
AC -- 4 to 24 in	silt loam	moderate	3.01 to 4.42 in	7.9 to 8.4
C -- 24 to 60 in	clay loam	moderately slow	5.02 to 6.81 in	7.9 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I75A--Radium-Sandberg-Garborg complex, 0 to 3 percent slopes

#### Radium

<p><i>Extent:</i> 40 percent of the unit</p> <p><i>Landform(s):</i> beach ridges on lake plains</p> <p><i>Slope gradient:</i> 0 to 3 percent</p> <p><i>Parent material:</i> beach deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .20</p> <p><i>Land capability, nonirrigated</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 14 in	loamy sand	rapid	0.85 to 1.70 in	6.1 to 7.8
Bw -- 14 to 33 in	sand	rapid	0.57 to 1.51 in	6.6 to 8.4
C1 -- 33 to 43 in	very gravelly coarse sand	very rapid	0.20 to 0.49 in	7.4 to 8.4
C2 -- 43 to 80 in	sand	rapid	1.11 to 3.33 in	7.4 to 8.4

#### Sandberg

<p><i>Extent:</i> 20 percent of the unit</p> <p><i>Landform(s):</i> beach ridges on lake plains</p> <p><i>Slope gradient:</i> 1 to 3 percent</p> <p><i>Parent material:</i> beach deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .15</p> <p><i>Land capability, nonirrigated</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<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	0.79 to 0.94 in	5.6 to 7.8
A -- 8 to 12 in	loamy sand	rapid	0.39 to 0.47 in	5.6 to 7.8
Bw -- 12 to 19 in	gravelly loamy coarse sand	rapid	0.21 to 0.71 in	6.1 to 7.8
Bk -- 19 to 29 in	gravelly coarse sand	very rapid	0.20 to 0.61 in	7.4 to 8.4
C -- 29 to 80 in	gravelly coarse sand	very rapid	1.02 to 2.03 in	7.4 to 8.4

## Map Unit Description (MN)

Pennington County, Minnesota

### I75A--Radium-Sandberg-Garborg complex, 0 to 3 percent slopes

#### Garborg

<i>Extent:</i> 15 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on delta plains	<i>Wind erodibility group (WEG):</i> 2
<i>Slope gradient:</i> 0 to 3 percent	<i>Wind erodibility index (WEI):</i> 134
<i>Parent material:</i> sandy glaciofluvial deposits and/or sandy glaciolacustrine deposits	<i>Kw factor (surface layer)</i> .17
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 4e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B
<i>Drainage class:</i> somewhat poorly drained	<i>Potential for frost action:</i> moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loamy fine sand	moderately rapid	1.18 to 1.42 in	6.1 to 7.8
Bw -- 12 to 41 in	loamy fine sand	rapid	1.75 to 3.79 in	6.6 to 7.8
BcK -- 41 to 59 in	fine sand	rapid	0.91 to 1.63 in	6.6 to 8.4
C -- 59 to 80 in	fine sand	rapid	1.04 to 1.88 in	6.6 to 8.4

### M-W--Miscellaneous water

#### Water, miscellaneous

<i>Extent:</i> 100 percent of the unit	<i>Soil loss tolerance (T factor):</i>
<i>Landform(s):</i>	<i>Wind erodibility group (WEG):</i>
<i>Slope gradient:</i>	<i>Wind erodibility index (WEI):</i>
<i>Parent material:</i>	<i>Kw factor (surface layer)</i>
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i>
<i>Flooding:</i>	<i>Hydric soil:</i>
<i>Ponding:</i>	<i>Hydrologic group:</i>
<i>Drainage class:</i>	<i>Potential for frost action:</i>

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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# Map Unit Description (MN)

Pennington County, Minnesota

## W--Water

### Water

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

*Representative soil profile:*

*Texture*

*Permeability*

*Available water  
capacity*

*pH*

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