

## Map Unit Description (MN)

Crow Wing 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]

### 1007--Udorthents, shallow (sanitary landfill)

#### Udorthents, shallow (sanitary landfill)

*Extent:* 100 percent of the unit

*Landform(s):* lake plains

*Slope gradient:*

*Parent material:* variable soil material

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

*Flooding:*

*Ponding:*

*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:* no

*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>
-------------------------------------	----------------	---------------------	---------------------------------	-----------

### D49D--Graycalm loamy sand, 12 to 25 percent slopes

#### Graycalm

*Extent:* 70 to 90 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 12 to 25 percent

*Parent material:* glaciolacustrine deposits

*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 5 in	loamy sand	rapid	0.51 to 0.61 in	4.5 to 6.0
Bw1 -- 5 to 13 in	loamy fine sand	rapid	0.79 to 1.10 in	5.1 to 6.1
Bw2 -- 13 to 44 in	sand	rapid	1.57 to 2.20 in	5.6 to 6.4
E and Bt -- 44 to 80 in	sand	rapid	1.77 to 2.48 in	5.8 to 6.7

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D53B--Lougee-Barber-Guida complex, 0 to 6 percent slopes

#### Lougee

<p><i>Extent:</i> 25 to 55 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> herbaceous organic material over glaciolacustrine 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> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 7w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 3 in	peat	very rapid	1.73 to 2.05 in	
Oe -- 3 to 12 in	mucky peat	rapid	3.90 to 4.76 in	
Oa -- 12 to 28 in	muck	moderately rapid	5.51 to 7.09 in	
2A -- 28 to 31 in	mucky loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.0
2Cg1 -- 31 to 43 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg2 -- 43 to 55 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg3 -- 55 to 80 in	fine sand	rapid	1.74 to 2.23 in	5.6 to 7.0

#### Barber

<p><i>Extent:</i> 25 to 45 percent of the unit</p> <p><i>Landform(s):</i> lake plains</p> <p><i>Slope gradient:</i> 0 to 4 percent</p> <p><i>Parent material:</i> glaciolacustrine 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> somewhat poorly 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> 3s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A/D</p> <p><i>Potential for frost action:</i> low</p>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy fine sand	rapid	0.35 to 0.47 in	4.5 to 5.1
Bw1 -- 3 to 18 in	loamy fine sand	rapid	1.05 to 2.09 in	4.5 to 5.5
Bw2 -- 18 to 30 in	fine sand	rapid	0.59 to 0.94 in	5.1 to 6.5
Cg -- 30 to 80 in	fine sand	rapid	3.00 to 5.50 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D53B--Lougee-Barber-Guida complex, 0 to 6 percent slopes

#### Guida

*Extent:* 15 to 30 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 2 to 6 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):* 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>
A -- 0 to 6 in	loamy fine sand	rapid	0.69 to 0.94 in	4.5 to 5.1
Bw1 -- 6 to 15 in	loamy fine sand	rapid	0.58 to 1.16 in	4.5 to 5.5
Bw2 -- 15 to 30 in	fine sand	rapid	0.75 to 1.20 in	5.1 to 6.5
Bw3 -- 30 to 41 in	fine sand	rapid	0.57 to 0.91 in	5.1 to 6.5
E and Bt -- 41 to 57 in	fine sand	rapid	0.94 to 2.20 in	5.1 to 6.5
C -- 57 to 80 in	fine sand	rapid	1.39 to 2.56 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D62A--Zimmerman loamy fine sand, 0 to 2 percent slopes

#### Zimmerman

*Extent:* 85 to 95 percent of the unit

*Landform(s):* flats 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:* 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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	4.5 to 5.1
Bw1 -- 4 to 10 in	loamy fine sand	rapid	0.41 to 0.83 in	4.5 to 5.5
Bw2 -- 10 to 19 in	fine sand	rapid	0.45 to 0.72 in	5.1 to 6.5
E and Bt1 -- 19 to 23 in	fine sand	rapid	0.24 to 0.55 in	5.1 to 6.5
E and Bt2 -- 23 to 80 in	fine sand	rapid	3.43 to 6.28 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D62B--Zimmerman loamy fine sand, 1 to 6 percent slopes

#### Zimmerman

*Extent:* 100 to 100 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 1 to 6 percent

*Parent material:* glaciolacustrine deposits

*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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	4.5 to 5.1
Bw1 -- 4 to 10 in	loamy fine sand	rapid	0.41 to 0.83 in	4.5 to 5.5
Bw2 -- 10 to 19 in	fine sand	rapid	0.45 to 0.72 in	5.1 to 6.5
E and Bt1 -- 19 to 23 in	fine sand	rapid	0.24 to 0.55 in	5.1 to 6.5
E and Bt2 -- 23 to 80 in	fine sand	rapid	3.43 to 6.28 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D62C--Zimmerman loamy fine sand, 6 to 15 percent slopes

#### Zimmerman

*Extent:* 80 to 95 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 6 to 15 percent

*Parent material:* glaciolacustrine deposits

*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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	4.5 to 5.1
Bw1 -- 4 to 10 in	loamy fine sand	rapid	0.41 to 0.83 in	4.5 to 5.5
Bw2 -- 10 to 19 in	fine sand	rapid	0.45 to 0.72 in	5.1 to 6.5
E and Bt1 -- 19 to 23 in	fine sand	rapid	0.24 to 0.55 in	5.1 to 6.5
E and Bt2 -- 23 to 80 in	fine sand	rapid	3.43 to 6.28 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D63A--Zimmerman loamy fine sand, 0 to 3 percent slopes, pitted

#### Zimmerman, pitted

*Extent:* 75 to 90 percent of the unit

*Landform(s):* flats 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 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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	4.5 to 5.1
Bw1 -- 4 to 10 in	loamy fine sand	rapid	0.41 to 0.83 in	4.5 to 5.5
Bw2 -- 10 to 19 in	fine sand	rapid	0.45 to 0.72 in	5.1 to 6.5
E and Bt1 -- 19 to 23 in	fine sand	rapid	0.24 to 0.55 in	5.1 to 6.5
E and Bt2 -- 23 to 80 in	fine sand	rapid	3.43 to 6.28 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D65A--Lougee peat, zimmerman catena, 0 to 1 percent slopes

#### Lougee

*Extent:* 90 to 98 percent of the unit

*Landform(s):* closed depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous organic material over glaciolacustrine deposits

*Restrictive feature(s):* greater than 60 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)* .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 3 in	peat	very rapid	1.73 to 2.05 in	
Oe -- 3 to 12 in	mucky peat	rapid	3.90 to 4.76 in	
Oa -- 12 to 28 in	muck	moderately rapid	5.51 to 7.09 in	
2A -- 28 to 31 in	mucky loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.0
2Cg1 -- 31 to 43 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg2 -- 43 to 55 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg3 -- 55 to 80 in	fine sand	rapid	1.74 to 2.23 in	5.6 to 7.0

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D66A--Uskabwanka-Rifle-Barber complex, 0 to 3 percent slopes

#### Uskabwanka

<p><i>Extent:</i> 20 to 50 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 40 in	mucky peat	rapid	13.64 to 16.67 in	
2Oe2 -- 40 to 70 in	water	impermeable		
Oe3 -- 70 to 80 in	mucky peat	rapid	4.43 to 5.41 in	

#### Rifle, ponded

<p><i>Extent:</i> 15 to 45 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> 2</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 12 in	peat	very rapid	6.50 to 7.68 in	
Oe -- 12 to 43 in	mucky peat	rapid	14.17 to 17.32 in	
Oa1 -- 43 to 59 in	muck	moderately rapid	5.51 to 7.09 in	
Oa2 -- 59 to 80 in	muck	moderately rapid	7.30 to 9.39 in	

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D66A--Uskabwanka-Rifle-Barber complex, 0 to 3 percent slopes

#### Barber

*Extent:* 10 to 20 percent of the unit

*Landform(s):* 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)* .20

*Land capability, nonirrigated:* 3s

*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>
A -- 0 to 3 in	loamy fine sand	rapid	0.35 to 0.47 in	4.5 to 5.1
Bw1 -- 3 to 18 in	loamy fine sand	rapid	1.05 to 2.09 in	4.5 to 5.5
Bw2 -- 18 to 30 in	fine sand	rapid	0.59 to 0.94 in	5.1 to 6.5
Cg -- 30 to 80 in	fine sand	rapid	3.00 to 5.50 in	5.1 to 6.5

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D67A--Rifle soils, zimmerman catena, 0 to 1 percent slopes

#### Rifle, ponded

<p><i>Extent:</i> 0 to 95 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> 2</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
--	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 12 in	peat	very rapid	6.50 to 7.68 in	
Oe -- 12 to 43 in	mucky peat	rapid	14.17 to 17.32 in	
Oa1 -- 43 to 59 in	muck	moderately rapid	5.51 to 7.09 in	
Oa2 -- 59 to 80 in	muck	moderately rapid	7.30 to 9.39 in	

#### Rifle

<p><i>Extent:</i> 0 to 95 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> 2</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 7w</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>
--	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 12 in	peat	very rapid	6.50 to 7.68 in	
Oe -- 12 to 43 in	mucky peat	rapid	14.17 to 17.32 in	
Oa1 -- 43 to 59 in	muck	moderately rapid	5.51 to 7.09 in	
Oa2 -- 59 to 80 in	muck	moderately rapid	7.30 to 9.39 in	

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D68A--Uskabwanka-Rifle-Lougee complex, 0 to 1 percent slopes

#### Uskabwanka

<p><i>Extent:</i> 25 to 75 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 40 in	mucky peat	rapid	13.64 to 16.67 in	
2Oe2 -- 40 to 70 in	water	impermeable		
Oe3 -- 70 to 80 in	mucky peat	rapid	4.43 to 5.41 in	

#### Rifle, ponded

<p><i>Extent:</i> 15 to 55 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> 2</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 12 in	peat	very rapid	6.50 to 7.68 in	
Oe -- 12 to 43 in	mucky peat	rapid	14.17 to 17.32 in	
Oa1 -- 43 to 59 in	muck	moderately rapid	5.51 to 7.09 in	
Oa2 -- 59 to 80 in	muck	moderately rapid	7.30 to 9.39 in	

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D68A--Uskabwanka-Rifle-Lougee complex, 0 to 1 percent slopes

#### Lougee, ponded

*Extent:* 10 to 20 percent of the unit

*Landform(s):* closed depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous 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>
Oi -- 0 to 3 in	peat	very rapid	1.73 to 2.05 in	
Oe -- 3 to 12 in	mucky peat	rapid	3.90 to 4.76 in	
Oa -- 12 to 28 in	muck	moderately rapid	5.51 to 7.09 in	
2A -- 28 to 31 in	mucky loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.0
2Cg1 -- 31 to 43 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg2 -- 43 to 55 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg3 -- 55 to 80 in	fine sand	rapid	1.74 to 2.23 in	5.6 to 7.0

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D69B--Zimmerman-Urban land complex, 0 to 6 percent slopes

#### Zimmerman

*Extent:* 25 to 75 percent of the unit

*Landform(s):* flats on lake plains

*Slope gradient:* 0 to 6 percent

*Parent material:* glaciolacustrine deposits

*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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	4.5 to 5.1
Bw1 -- 4 to 10 in	loamy fine sand	rapid	0.41 to 0.83 in	4.5 to 5.5
Bw2 -- 10 to 19 in	fine sand	rapid	0.45 to 0.72 in	5.1 to 6.5
E and Bt1 -- 19 to 23 in	fine sand	rapid	0.24 to 0.55 in	5.1 to 6.5
E and Bt2 -- 23 to 80 in	fine sand	rapid	3.43 to 6.28 in	5.1 to 6.5

#### Urban land

*Extent:* 15 to 65 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 0 to 6 percent

*Parent material:* fill material from surrounding uplands

*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:* unranked

*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)

Crow Wing County, Minnesota

### D70A--Barber-Urban land complex, 0 to 3 percent slopes

#### Barber

*Extent:* 35 to 65 percent of the unit

*Landform(s):* 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)* .20

*Land capability, nonirrigated:* 3s

*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>
A -- 0 to 3 in	loamy fine sand	rapid	0.35 to 0.47 in	4.5 to 5.1
Bw1 -- 3 to 18 in	loamy fine sand	rapid	1.05 to 2.09 in	4.5 to 5.5
Bw2 -- 18 to 30 in	fine sand	rapid	0.59 to 0.94 in	5.1 to 6.5
Cg -- 30 to 80 in	fine sand	rapid	3.00 to 5.50 in	5.1 to 6.5

#### Urban land

*Extent:* 20 to 50 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 0 to 3 percent

*Parent material:* fill material from surrounding uplands

*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:* unranked

*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)

Crow Wing County, Minnesota

### D71A--Rifle, Seelyeville and Lougee soils, 0 to 1 percent slopes, ponded

#### Rifle, ponded

<p><i>Extent:</i> 0 to 95 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material</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> 2</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
--	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 12 in	peat	very rapid	6.50 to 7.68 in	
Oe -- 12 to 43 in	mucky peat	rapid	14.17 to 17.32 in	
Oa1 -- 43 to 59 in	muck	moderately rapid	5.51 to 7.09 in	
Oa2 -- 59 to 80 in	muck	moderately rapid	7.30 to 9.39 in	

#### Lougee, ponded

<p><i>Extent:</i> 0 to 95 percent of the unit</p> <p><i>Landform(s):</i> closed depressions on lake plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> herbaceous organic material over glaciolacustrine deposits</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> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated:</i> 8w</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>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oi -- 0 to 3 in	peat	very rapid	1.73 to 2.05 in	
Oe -- 3 to 12 in	mucky peat	rapid	3.90 to 4.76 in	
Oa -- 12 to 28 in	muck	moderately rapid	5.51 to 7.09 in	
2A -- 28 to 31 in	mucky loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.0
2Cg1 -- 31 to 43 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg2 -- 43 to 55 in	fine sand	rapid	0.83 to 1.06 in	5.6 to 7.0
2Cg3 -- 55 to 80 in	fine sand	rapid	1.74 to 2.23 in	5.6 to 7.0

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D71A--Rifle, Seelyeville and Lougee soils, 0 to 1 percent slopes, ponded

#### Seelyeville, ponded

*Extent:* 0 to 95 percent of the unit

*Landform(s):* closed depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* herbaceous 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:* 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 4.72 in	
Oa2-Oa5 -- 10 to 80 in	muck	moderately rapid	24.53 to 33.64 in	

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D72B--Graycalm-Wurtsmith complex, 2 to 8 percent slopes

#### Graycalm

<p><i>Extent:</i> 40 to 80 percent of the unit</p> <p><i>Landform(s):</i> lake plains</p> <p><i>Slope gradient:</i> 2 to 8 percent</p> <p><i>Parent material:</i> glaciolacustrine 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> somewhat 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> .17</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>
--	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	4.5 to 6.0
Bw1 -- 5 to 13 in	loamy fine sand	rapid	0.79 to 1.10 in	5.1 to 6.1
Bw2 -- 13 to 44 in	sand	rapid	1.57 to 2.20 in	5.6 to 6.4
E and Bt -- 44 to 80 in	sand	rapid	1.77 to 2.48 in	5.8 to 6.7

#### Wurtsmith

<p><i>Extent:</i> 10 to 40 percent of the unit</p> <p><i>Landform(s):</i> lake plains</p> <p><i>Slope gradient:</i> 2 to 5 percent</p> <p><i>Parent material:</i> glaciolacustrine 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> low</p>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	5.0 to 6.0
Bw -- 4 to 24 in	loamy fine sand	rapid	1.81 to 2.21 in	5.1 to 6.1
E and Bt -- 24 to 40 in	sand	rapid	0.81 to 1.13 in	5.6 to 6.6
Cg -- 40 to 80 in	sand	rapid	1.99 to 2.78 in	5.8 to 6.7

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D73B--Wurtsmith-Meehan complex, MLRA 91A, 2 to 8 percent slopes

#### Wurtsmith

*Extent:* 35 to 55 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 2 to 8 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):* 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>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	5.0 to 6.0
Bw -- 4 to 24 in	loamy fine sand	rapid	1.81 to 2.21 in	5.1 to 6.1
E and Bt -- 24 to 40 in	sand	rapid	0.81 to 1.13 in	5.6 to 6.6
Cg -- 40 to 80 in	sand	rapid	1.99 to 2.78 in	5.8 to 6.7

#### Meehan

*Extent:* 30 to 50 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 1 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)* .15

*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>
A -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.0 to 6.0
Bw1 -- 4 to 13 in	loamy sand	rapid	0.78 to 0.95 in	5.1 to 6.1
Bw2 -- 13 to 32 in	loamy fine sand	rapid	1.77 to 2.56 in	5.6 to 6.4
Bw3 -- 32 to 40 in	fine sand	rapid	0.47 to 0.63 in	5.8 to 6.7
Bg -- 40 to 80 in	fine sand	rapid	2.39 to 3.18 in	5.8 to 6.7

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D74B--Wurtsmith-Meehan-Beach complex, MLRA 91A, 1 to 8 percent slopes

#### Wurtsmith

<p><i>Extent:</i> 20 to 50 percent of the unit</p> <p><i>Landform(s):</i> lake plains</p> <p><i>Slope gradient:</i> 2 to 8 percent</p> <p><i>Parent material:</i> glaciolacustrine 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> low</p>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy fine sand	rapid	0.43 to 0.59 in	5.0 to 6.0
Bw -- 4 to 24 in	loamy fine sand	rapid	1.81 to 2.21 in	5.1 to 6.1
E and Bt -- 24 to 40 in	sand	rapid	0.81 to 1.13 in	5.6 to 6.6
Cg -- 40 to 80 in	sand	rapid	1.99 to 2.78 in	5.8 to 6.7

#### Meehan

<p><i>Extent:</i> 20 to 50 percent of the unit</p> <p><i>Landform(s):</i> lake plains</p> <p><i>Slope gradient:</i> 1 to 3 percent</p> <p><i>Parent material:</i> glaciolacustrine 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> somewhat poorly 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/D</p> <p><i>Potential for frost action:</i> low</p>
---	---

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.0 to 6.0
Bw1 -- 4 to 13 in	loamy sand	rapid	0.78 to 0.95 in	5.1 to 6.1
Bw2 -- 13 to 32 in	loamy fine sand	rapid	1.77 to 2.56 in	5.6 to 6.4
Bw3 -- 32 to 40 in	fine sand	rapid	0.47 to 0.63 in	5.8 to 6.7
Bg -- 40 to 80 in	fine sand	rapid	2.39 to 3.18 in	5.8 to 6.7

## Map Unit Description (MN)

Crow Wing County, Minnesota

### D74B--Wurtsmith-Meehan-Beach complex, MLRA 91A, 1 to 8 percent slopes

#### Beach

*Extent:* 20 to 40 percent of the unit

*Landform(s):* lake plains

*Slope gradient:* 1 to 3 percent

*Parent material:* glaciolacustrine deposits

*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):* 1

*Wind erodibility index (WEI):* 220

*Kw factor (surface layer)* .05

*Land capability, nonirrigated:* 4w

*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>
Bg -- 0 to 12 in	sand	rapid	0.47 to 1.06 in	5.1 to 6.1
Cg1 -- 12 to 20 in	sand	rapid	0.31 to 0.71 in	5.8 to 6.7
Cg2 -- 20 to 80 in	sand	rapid	2.41 to 5.42 in	5.8 to 6.7

### NOTCOM--No Digital Data Available

#### NOTCOMM

*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>
-------------------------------------	----------------	---------------------	---------------------------------	-----------

## Map Unit Description (MN)

Crow Wing County, Minnesota

### W--Water

#### Water

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:* 0 to 0 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>
-------------------------------------	----------------	---------------------	---------------------------------	-----------

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.