

Map Unit Description (MN)

Nobles County, Minnesota

L5A--Delft, overwash-Delft complex, 1 to 4 percent slopes

Delft, overwash

Extent: 40 to 60 percent of the unit

Landform(s): moraine

Slope gradient: 1 to 4 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

colluvium over till Kw (surface layer): .24

Land capability class, nonirrigated: 2w

Hydric soil: no

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap -- 0 to 12 in loam

A -- 12 to 37 in loam

Bg -- 37 to 47 in clay loam

Cg -- 47 to 80 in loam

moderately slow 2.1 to 2.4 in 5.6 to 7.8

moderately slow 4.5 to 5.0 in 5.6 to 7.8

moderate 1.9 to 2.2 in 6.6 to 7.8

moderate 5.0 to 6.3 in 7.4 to 8.4

Delft

Extent: 30 to 55 percent of the unit

Landform(s): moraine

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

colluvium over till Kw (surface layer): .24

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A -- 0 to 37 in loam

Bg -- 37 to 50 in clay loam

Cg -- 50 to 60 in loam

moderately slow 6.7 to 7.4 in 5.6 to 7.8

moderate 2.5 to 2.9 in 6.6 to 7.8

moderate 1.5 to 1.9 in 7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L6A--Biscay loam, 0 to 2 percent slopes

Biscay

Extent: 80 to 100 percent of the unit
Landform(s): outwash plain, stream terrace
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:

	Texture	Permeability	Available water	pH
Ap,A1,A2 -- 0 to 20 in	loam	moderate	4.0 to 4.4 in	6.1 to 7.8
Bg -- 20 to 28 in	loam	moderate	1.3 to 1.5 in	6.6 to 7.8
2BCg -- 28 to 36 in	gravelly loam	moderately rapid	0.9 to 1.3 in	6.6 to 7.8
2Cg -- 36 to 60 in	stratified very gravelly coarse sand to loamy sand	rapid	0.5 to 1.0 in	7.4 to 8.4

L78A--Canisteo clay loam, 0 to 2 percent slopes

Canisteo

Extent: 55 to 85 percent of the unit
Landform(s): moraine
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:

	Texture	Permeability	Available water	pH
Ap,A -- 0 to 18 in	clay loam	moderate	3.3 to 4.0 in	7.4 to 8.4
Bkg -- 18 to 39 in	loam	moderate	3.1 to 4.0 in	7.4 to 8.4
Cg -- 39 to 80 in	loam	moderate	6.1 to 7.8 in	7.4 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L79B--Clarion loam, 2 to 5 percent slopes

Clarion

Extent: 50 to 80 percent of the unit

Landform(s): hill on moraine

Slope gradient: 2 to 5 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Ap,A	--	0 to 14 in	loam
Bw	--	14 to 33 in	loam
Bk	--	33 to 60 in	loam

Permeability

	<i>Available water</i>	<i>pH</i>
moderate	2.8 to 3.1 in	5.6 to 7.3
moderate	3.2 to 3.6 in	5.6 to 7.3
moderate	4.0 to 5.1 in	7.4 to 8.4

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

Webster

Extent: 50 to 85 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Ap,A	--	0 to 19 in	clay loam
Bg	--	19 to 26 in	clay loam
BCg,Cg	--	26 to 60 in	loam

Permeability

	<i>Available water</i>	<i>pH</i>
moderate	3.6 to 4.0 in	6.6 to 7.3
moderate	1.1 to 1.3 in	6.6 to 7.8
moderate	5.1 to 6.4 in	7.4 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L85A--Nicollet clay loam, 1 to 3 percent slopes

Nicollet

Extent: 70 to 95 percent of the unit

Landform(s): moraine

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A -- 0 to 17 in clay loam
 Bw,Bg -- 17 to 33 in clay loam
 Bg -- 33 to 36 in clay loam
 Cg -- 36 to 60 in loam

moderate 2.9 to 3.7 in 5.6 to 7.3
 moderate 2.4 to 3.1 in 5.6 to 7.3
 moderate 0.4 to 0.5 in 7.4 to 8.4
 moderate 3.6 to 4.6 in 7.4 to 8.4

L88A--Lura silty clay, depressional, 0 to 1 percent slopes

Lura, depressional

Extent: 75 to 95 percent of the unit

Landform(s): lake plain

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

lacustrine sediments *Kw (surface layer):* .28

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap -- 0 to 10 in silty clay
 A -- 10 to 58 in clay
 Bg -- 58 to 72 in silty clay

slow 1.4 to 1.7 in 6.1 to 7.8
 slow 6.7 to 8.2 in 6.1 to 7.3
 moderately slow 1.6 to 2.7 in 6.6 to 7.8

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Map Unit Description (MN)

Nobles County, Minnesota

L96B--Estherville-Hawick complex, 2 to 6 percent slopes

Estherville

Extent: 40 to 65 percent of the unit
Landform(s): hill on outwash plain, hill on terrace
Slope gradient: 2 to 6 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap,A --	0 to 13 in	sandy loam	moderately rapid	1.7 to 2.3 in	5.6 to 7.3	
Bw1 --	13 to 18 in	sandy loam	moderately rapid	0.6 to 0.9 in	5.6 to 7.3	
2Bw2 --	18 to 23 in	loamy coarse sand	rapid	0.1 to 0.2 in	5.6 to 7.3	
2C --	23 to 60 in	gravelly coarse sand	rapid	0.7 to 1.5 in	6.6 to 8.4	

Hawick

Extent: 25 to 40 percent of the unit
Landform(s): hill on outwash plain, hill on stream terrace
Slope gradient: 2 to 6 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
 outwash *Kw (surface layer):* .10
Land capability class, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap --	0 to 7 in	sandy loam	rapid	0.2 to 0.9 in	6.1 to 7.8	
Bw,C --	7 to 80 in	gravelly coarse sand	very rapid	1.5 to 4.4 in	7.4 to 8.4	

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Map Unit Description (MN)

Nobles County, Minnesota

L97C--Hawick-Estherville complex, 6 to 12 percent slopes

Hawick

Extent: 45 to 70 percent of the unit
Landform(s): hill on outwash plain, hill on stream terrace
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
 outwash *Kw (surface layer):* .10
Land capability class, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential frost action: low
Available water

<i>Representative soil profile:</i>	<i>Texture</i>
Ap -- 0 to 7 in	gravelly sandy loam
Bw,C -- 7 to 80 in	gravelly coarse sand

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
rapid	0.2 to 0.9 in	6.1 to 7.8
very rapid	1.5 to 4.4 in	7.4 to 8.4

Estherville

Extent: 25 to 40 percent of the unit
Landform(s): hill on outwash plain, hill on stream terrace
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

<i>Representative soil profile:</i>	<i>Texture</i>
Ap,A -- 0 to 13 in	sandy loam
Bw1 -- 13 to 18 in	sandy loam
2Bw2 -- 18 to 23 in	loamy coarse sand
2C -- 23 to 60 in	gravelly coarse sand

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderately rapid	1.7 to 2.3 in	5.6 to 7.3
moderately rapid	0.6 to 0.9 in	5.6 to 7.3
rapid	0.1 to 0.2 in	5.6 to 7.3
rapid	0.7 to 1.5 in	6.6 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L98A--Crippin-Nicollet complex, 1 to 3 percent slopes

Crippin

Extent: 40 to 60 percent of the unit

Landform(s): moraine

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,AB --	0 to 15 in	loam
Bw --	15 to 27 in	loam
C --	27 to 60 in	loam

moderate	3.0 to 3.3 in	6.6 to 8.4		
moderate	2.1 to 2.3 in	7.4 to 8.4		
moderate	4.9 to 6.2 in	7.4 to 8.4		

Nicollet

Extent: 30 to 45 percent of the unit

Landform(s): moraine

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 17 in	clay loam
Bw,Bg --	17 to 33 in	clay loam
Bg --	33 to 36 in	clay loam
Cg --	36 to 60 in	loam

moderate	2.9 to 3.7 in	5.6 to 7.3		
moderate	2.4 to 3.1 in	5.6 to 7.3		
moderate	0.4 to 0.5 in	7.4 to 8.4		
moderate	3.6 to 4.6 in	7.4 to 8.4		

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Map Unit Description (MN)

Nobles County, Minnesota

L102C2--Omsrud-Storden complex, 6 to 12 percent slopes, moderately eroded

Omsrud, moderately eroded

Extent: 40 to 70 percent of the unit
Landform(s): hill on moraine
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.8 to 2.0 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.7 to 1.9 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.5 to 3.2 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.6 to 8.4 in	7.4 to 8.4

Storden, moderately eroded

Extent: 20 to 30 percent of the unit
Landform(s): hill on moraine
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.4 to 1.6 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.2 to 9.1 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.7 to 4.7 in	7.4 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L102D2--Omsrud-Storden complex, 12 to 18 percent slopes, moderately

Omsrud, moderately eroded

Extent: 40 to 75 percent of the unit
Landform(s): hill on moraine
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.8 to 2.0 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.7 to 1.9 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.5 to 3.2 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.6 to 8.4 in	7.4 to 8.4

Storden, moderately eroded

Extent: 15 to 25 percent of the unit
Landform(s): hill on moraine
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.4 to 1.6 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.2 to 9.1 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.7 to 4.7 in	7.4 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L107A--Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes

Canisteo

Extent: 30 to 70 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

	<i>Texture</i>
Ap,A -- 0 to 18 in	clay loam
Bkg -- 18 to 39 in	loam
Cg -- 39 to 80 in	loam

Permeability

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderate	3.3 to 4.0 in	7.4 to 8.4
moderate	3.1 to 4.0 in	7.4 to 8.4
moderate	6.1 to 7.8 in	7.4 to 8.4

Glencoe, depressional

Extent: 15 to 55 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

	<i>Texture</i>
Ap -- 0 to 10 in	clay loam
A,ABg -- 10 to 35 in	clay loam
Bg -- 35 to 48 in	loam
Cg -- 48 to 60 in	loam

Permeability

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderate	1.8 to 2.2 in	6.1 to 7.8
moderate	4.5 to 5.5 in	6.1 to 7.8
moderate	1.9 to 2.5 in	6.6 to 7.8
moderate	1.8 to 2.2 in	7.4 to 8.4

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Map Unit Description (MN)

Nobles County, Minnesota

L111A--Nicollet silty clay loam, 1 to 3 percent slopes

Nicollet

<p><i>Extent:</i> 70 to 90 percent of the unit <i>Landform(s):</i> moraine <i>Slope gradient:</i> 1 to 3 percent <i>Parent material:</i> layer): .24 <i>Restrictive feature(s):</i> <i>Flooding:</i> none <i>Ponding:</i> none <i>Drainage class:</i> somewhat poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5 <i>Wind erodibility group (WEG):</i> 7 <i>Wind erodibility index (WEI):</i> 38 lacustrine sediments over till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 1 <i>Hydric soil:</i> no <i>Hydrologic group:</i> B <i>Potential frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.7 to 2.2 in	5.6 to 7.3	
Bw -- 10 to 31 in	clay loam	moderate	3.1 to 4.0 in	5.6 to 7.8	
Bk -- 31 to 42 in	loam	moderate	1.7 to 2.1 in	7.4 to 8.4	
C -- 42 to 80 in	loam	moderate	5.7 to 7.3 in	7.4 to 8.4	

L112A--Webster silty clay loam, 0 to 2 percent slopes

Webster

<p><i>Extent:</i> 75 to 90 percent of the unit <i>Landform(s):</i> moraine <i>Slope gradient:</i> 0 to 2 percent <i>Parent material:</i> layer): .24 <i>Restrictive feature(s):</i> <i>Flooding:</i> none <i>Ponding:</i> none <i>Drainage class:</i> poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5 <i>Wind erodibility group (WEG):</i> 6 <i>Wind erodibility index (WEI):</i> 48 lacustrine sediments over till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 2w <i>Hydric soil:</i> yes <i>Hydrologic group:</i> B/D <i>Potential frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap,A,AB -- 0 to 24 in	silty clay loam	moderate	4.6 to 5.0 in	6.6 to 7.3	
Bg -- 24 to 45 in	clay loam	moderate	3.4 to 3.8 in	6.6 to 7.8	
Cg -- 45 to 80 in	loam	moderate	5.2 to 6.6 in	7.4 to 8.4	

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

L126A--Coland silty clay loam, 0 to 2 percent slopes, occasionally flooded

Coland, occasionally flooded

Extent: 65 to 90 percent of the unit

Landform(s): flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

alluvium *Kw (surface layer):* .24

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A -- 0 to 25 in silty clay loam
AC,Cg1 -- 25 to 54 in loam
Cg2 -- 54 to 60 in sandy loam

Permeability	Available water	pH
moderate	5.0 to 5.5 in	6.1 to 7.3
moderate	5.7 to 6.3 in	6.1 to 7.3
moderately rapid	0.8 to 1.0 in	6.1 to 7.8

L127A--Coland silty clay loam, channeled, 0 to 2 percent slopes, frequently

Coland, frequently flooded

Extent: 65 to 90 percent of the unit

Landform(s): flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

alluvium *Kw (surface layer):* .24

Land capability class, nonirrigated: 5w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

A1 -- 0 to 12 in silty clay loam
A2 -- 12 to 30 in loam
A3 -- 30 to 55 in stratified fine sandy loam to loam
AB,Bg -- 55 to 80 in fine sandy loam

Permeability	Available water	pH
moderate	2.4 to 2.6 in	6.1 to 7.3
moderate	3.6 to 4.0 in	6.1 to 7.3
moderate	5.0 to 5.5 in	6.1 to 7.3
moderately rapid	3.2 to 4.2 in	6.1 to 7.8

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L129B--Terril loam, 2 to 6 percent slopes

Terril

Extent: 80 to 95 percent of the unit

Landform(s): hill on moraine

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

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

colluvium over till Kw (surface layer): .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A1 -- 0 to 27 in loam
A2,BA -- 27 to 40 in loam
BW -- 40 to 63 in loam
C -- 63 to 80 in loam

moderate 5.4 to 6.0 in 6.1 to 7.3
moderate 2.2 to 2.5 in 6.1 to 7.3
moderate 3.7 to 4.1 in 6.1 to 7.3
moderate 2.5 to 3.2 in 7.4 to 8.4

L130A--Okoboji mucky silty clay loam, depressional, 0 to 1 percent slopes

Okoboji, mucky silty clay loam, depressional

Extent: 60 to 85 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 1 percent

Parent material:

layer): .32

Restrictive feature(s):

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

lacustrine sediments over till Kw (surface

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A -- 0 to 13 in mucky silty clay loam
A -- 13 to 35 in silty clay loam
Bg -- 35 to 60 in silty clay loam

moderate 2.9 to 3.2 in 6.1 to 7.8
moderately slow 4.0 to 4.4 in 6.6 to 7.8
moderately slow 4.5 to 5.0 in 6.6 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L133A--Waldorf silty clay loam, 0 to 2 percent slopes

Waldorf

Extent: 75 to 85 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

lacustrine sedimentsKw (surface layer): .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Ap,A --	0 to 15 in	silty clay loam
AB --	15 to 20 in	silty clay loam
Bg --	20 to 53 in	silty clay
Cg --	53 to 80 in	silty clay loam

Permeability

moderately slow	2.7 to 3.7 in	6.1 to 7.3
moderately slow	0.9 to 1.3 in	6.1 to 7.3
moderately slow	4.3 to 5.3 in	6.6 to 7.8
moderately slow	5.4 to 5.9 in	7.6 to 8.4

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L134B--Clarion-Crooksford complex, 1 to 5 percent slopes

Clarion

Extent: 55 to 75 percent of the unit
Landform(s): hill on moraine
Slope gradient: 2 to 5 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.8 to 3.1 in	5.6 to 7.3
Bw -- 14 to 33 in	loam	moderate	3.2 to 3.6 in	5.6 to 7.3
Bk -- 33 to 60 in	loam	moderate	4.0 to 5.1 in	7.4 to 8.4

Crooksford

Extent: 15 to 25 percent of the unit
Landform(s): hill on moraine
Slope gradient: 1 to 5 percent
Parent material:
(surface layer): .28
Restrictive feature(s):
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
 lacustrine/loess sediments over till *Kw*
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: high
Available water

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	2.0 to 2.4 in	6.1 to 7.3
BA -- 10 to 20 in	silty clay loam	moderate	2.0 to 2.5 in	6.1 to 7.3
Bw -- 20 to 26 in	silt loam	moderate	1.1 to 1.4 in	6.6 to 7.8
2Bw -- 26 to 34 in	loam	moderate	1.3 to 1.5 in	5.6 to 7.3
2Bk -- 34 to 80 in	loam	moderate	7.8 to 11.1 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

L135A--Okabena silty clay loam, 1 to 3 percent slopes

Okabena

Extent: 70 to 90 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 1 to 3 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

lacustrine sediments over till Kw (surface

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,AB --	0 to 15 in	silty clay loam	moderate	2.7 to 3.6 in	5.6 to 7.3
Bw --	15 to 22 in	silty clay loam	moderate	1.1 to 1.4 in	5.6 to 7.3
Bk --	22 to 43 in	silt loam	moderate	3.3 to 4.6 in	7.4 to 8.4
Cg --	43 to 48 in	silt loam	moderate	0.8 to 1.0 in	7.4 to 8.4
2Cg --	48 to 80 in	clay loam	moderate	4.8 to 6.1 in	7.4 to 8.4

L136A--Crooksford silty clay loam, 1 to 3 percent slopes

Crooksford

Extent: 75 to 90 percent of the unit

Landform(s): hill on moraine

Slope gradient: 1 to 3 percent

Parent material:

(surface layer): .28

Restrictive feature(s):

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

lacustrine/loess sediments over till Kw

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 10 in	silty clay loam	moderate	2.0 to 2.4 in	6.1 to 7.3
BA --	10 to 20 in	silty clay loam	moderate	2.0 to 2.5 in	6.1 to 7.3
Bw --	20 to 26 in	silt loam	moderate	1.1 to 1.4 in	6.6 to 7.8
2Bw --	26 to 34 in	loam	moderate	1.3 to 1.5 in	5.6 to 7.3
2Bk --	34 to 80 in	loam	moderate	7.8 to 11.1 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L137A--Cylinder loam, 0 to 2 percent slopes

Cylinder

Extent: 80 to 95 percent of the unit
Landform(s): outwash plain, stream terrace
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
Ap,A1 -- 0 to 14 in	loam	moderate	2.8 to 3.1 in	5.6 to 7.3
A2 -- 14 to 18 in	loam	moderate	0.7 to 0.7 in	6.1 to 7.3
Bg1,2 -- 18 to 28 in	loam	moderate	1.7 to 1.9 in	6.1 to 7.3
2BC,2C -- 28 to 80 in	gravelly loamy sand	rapid	1.0 to 2.1 in	6.6 to 8.4

L138B--Estherville loam, 1 to 6 percent slopes

Estherville

Extent: 80 to 95 percent of the unit
Landform(s): hill on outwash plain, hill on terrace
Slope gradient: 1 to 6 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderately rapid	1.7 to 2.3 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.6 to 0.9 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.1 to 0.2 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.7 to 1.5 in	6.6 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

L139A--Wadena loam, 0 to 2 percent slopes

Wadena

Extent: 80 to 90 percent of the unit
Landform(s): outwash plain, stream terrace
Slope gradient: 0 to 2 percent
Parent material:

layer): .24

Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 loamy sediments over outwash Kw (surface

Land capability class, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential frost action: low

Representative soil profile:

<i>Representative soil profile:</i>			<i>Texture</i>		
Ap,A	--	0 to 13 in	loam		
Bw1	--	13 to 20 in	loam		
Bw2	--	20 to 30 in	sandy loam		
2C	--	30 to 60 in	gravelly coarse sand		

			<i>Available water</i>		
			<i>Permeability</i>		<i>pH</i>
			moderate	2.6 to 2.9 in	6.1 to 7.3
			moderate	1.0 to 1.3 in	5.6 to 7.3
			moderately rapid	1.3 to 1.8 in	5.6 to 7.3
			rapid	0.6 to 1.2 in	6.6 to 8.4

L139B--Wadena loam, 2 to 6 percent slopes

Wadena

Extent: 80 to 90 percent of the unit
Landform(s): hill on outwash plain, hill on terrace
Slope gradient: 2 to 6 percent
Parent material:

layer): .24

Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 loamy sediments over outwash Kw (surface

Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: low

Representative soil profile:

<i>Representative soil profile:</i>			<i>Texture</i>		
Ap,A	--	0 to 13 in	loam		
Bw1	--	13 to 20 in	loam		
Bw2	--	20 to 30 in	sandy loam		
2C	--	30 to 60 in	sand		

			<i>Available water</i>		
			<i>Permeability</i>		<i>pH</i>
			moderate	2.6 to 2.9 in	6.1 to 7.3
			moderate	1.0 to 1.3 in	5.6 to 7.3
			moderately rapid	1.3 to 1.8 in	5.6 to 7.3
			rapid	0.6 to 1.2 in	6.6 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

L140A--Ocheda silty clay loam, 1 to 3 percent slopes

Ocheda

Extent: 75 to 90 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 1 to 3 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

lacustrine sediments over till Kw (surface

Land capability class, nonirrigated: 2w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,AB --	0 to 20 in	silty clay loam
Bw --	20 to 28 in	silty clay loam
Bkg --	28 to 57 in	silty clay
2Cg --	57 to 80 in	loam

moderately slow	3.2 to 3.8 in	5.6 to 7.3
moderately slow	1.0 to 1.3 in	5.6 to 7.3
moderately slow	3.2 to 4.4 in	7.4 to 8.4
moderate	3.4 to 4.3 in	7.4 to 8.4

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

Spillville, occasionally flooded

Extent: 80 to 90 percent of the unit

Landform(s): flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

alluvium Kw (surface layer): .24

Land capability class, nonirrigated: 2w

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 51 in	loam
C --	51 to 60 in	loam

moderate	9.7 to 10.7 in	5.6 to 7.3
moderately rapid	1.3 to 1.6 in	5.6 to 7.3

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L144A--Chetomba silty clay loam, 0 to 2 percent slopes

Chetomba

Extent: 65 to 85 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 2 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

lacustrine sediments over till Kw (surface

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 23 in	silty clay loam
Bg --	23 to 31 in	silty clay loam
Cg --	31 to 43 in	silt loam
2Cg --	43 to 60 in	loam

moderate	4.1 to 5.5 in	6.1 to 7.3
moderate	1.3 to 1.8 in	6.6 to 7.8
moderate	1.9 to 2.6 in	7.4 to 8.4
moderate	2.5 to 3.2 in	7.4 to 8.4

L145A--Canisteo silty clay loam, 0 to 2 percent slopes

Canisteo

Extent: 75 to 85 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 2 percent

Parent material:

layer): .24

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

lacustrine sediments over till Kw (surface

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 17 in	silty clay loam
Bg --	17 to 27 in	silty clay loam
Cg --	27 to 60 in	loam

moderate	3.0 to 3.7 in	7.4 to 8.4
moderate	1.5 to 1.9 in	7.4 to 8.4
moderate	4.6 to 5.3 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L146A--Glencoe silty clay loam, depressional, 0 to 1 percent slopes

Glencoe, depressional

Extent: 75 to 100 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 10 in	silty clay loam
A,AB --	10 to 29 in	clay loam
Bg --	29 to 40 in	clay loam
Cg --	40 to 80 in	loam

moderate	1.9 to 2.1 in	6.6 to 7.3
moderate	3.5 to 4.2 in	6.1 to 7.8
moderate	1.7 to 2.1 in	6.6 to 7.8
moderate	6.0 to 7.6 in	7.4 to 8.4

L150A--Prinsburg silty clay loam, 0 to 2 percent slopes

Prinsburg

Extent: 65 to 80 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 2 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

lacustrine sediments over till *Kw (surface*

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

AP,A --	0 to 19 in	silty clay loam
Bkg --	19 to 29 in	silt loam
Bg,Cg --	29 to 46 in	silt loam
2Cg --	46 to 60 in	loam

moderate	3.4 to 4.5 in	7.4 to 8.4
moderate	1.6 to 2.3 in	7.4 to 8.4
moderate	2.7 to 3.7 in	7.4 to 8.4
moderate	2.1 to 2.6 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L151A--Glencoe mucky silty clay loam, ponded, 0 to 1 percent slopes

Glencoe, ponded

Extent: 75 to 90 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

A --	0 to 42 in	mucky silty clay loam
Bg --	42 to 50 in	clay loam
Cg --	50 to 60 in	loam

Permeability

moderate	7.6 to 9.3 in	6.1 to 7.8
moderate	1.2 to 1.5 in	6.6 to 7.8
moderate	1.5 to 1.9 in	7.4 to 8.4

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L152B--Lowlein-Round lake complex, 1 to 6 percent slopes

Lowlein

Extent: 35 to 70 percent of the unit
Landform(s): hill on moraine, stream terrace
Slope gradient: 1 to 5 percent
Parent material:
Restrictive feature(s):
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
outwash over till Kw (surface layer): .20
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate
Available water

<i>Representative soil profile:</i>	<i>Texture</i>
Ap,A -- 0 to 14 in	loam
Bw1 -- 14 to 24 in	loam
Bw2 -- 24 to 31 in	loamy sand
2C -- 31 to 60 in	loam

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderately rapid	1.8 to 2.1 in	6.1 to 7.3
moderately rapid	1.2 to 1.4 in	6.1 to 7.3
rapid	0.4 to 0.8 in	6.1 to 7.3
moderate	4.3 to 5.5 in	7.4 to 8.4

Round lake

Extent: 15 to 40 percent of the unit
Landform(s): hill on moraine
Slope gradient: 2 to 6 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>
Ap -- 0 to 11 in	sandy loam
Bw -- 11 to 14 in	sandy loam
2Bw -- 14 to 26 in	loamy coarse sand
2Bk -- 26 to 35 in	gravelly coarse sand
2C -- 35 to 48 in	coarse sand
3Cg -- 48 to 80 in	silt loam

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderately rapid	1.4 to 2.0 in	5.6 to 7.3
moderately rapid	0.4 to 0.6 in	5.6 to 7.3
rapid	0.2 to 0.5 in	5.6 to 7.3
rapid	0.2 to 0.4 in	6.6 to 8.4
rapid	0.3 to 0.5 in	6.6 to 8.4
moderate	5.1 to 7.0 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L153A--Essexville sandy loam, 0 to 2 percent slopes

Essexville

Extent: 75 to 90 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 2 percent

Parent material:

(*surface layer*): .20

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

glaciolacustrine sediments over till *Kw*

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Available water

Representative soil profile:

		<i>Texture</i>
Ap --	0 to 8 in	sandy loam
A --	8 to 13 in	loamy sand
Bg --	13 to 22 in	sand
2Cg --	22 to 60 in	loam

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderately rapid	1.0 to 1.4 in	7.4 to 8.4
rapid	0.2 to 0.6 in	7.4 to 8.4
rapid	0.4 to 1.1 in	7.4 to 8.4
moderate	5.7 to 7.2 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L154E--Belview-Ridgeton complex, 15 to 45 percent slopes

Belview

Extent: 30 to 70 percent of the unit
Landform(s): escarpment on moraine
Slope gradient: 18 to 45 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
A -- 0 to 9 in	loam	moderate	1.8 to 2.0 in	7.4 to 8.4	
Bk -- 9 to 50 in	loam	moderate	6.1 to 7.8 in	7.4 to 8.4	
C -- 50 to 60 in	loam	moderate	1.5 to 1.9 in	7.4 to 8.4	

Ridgeton

Extent: 15 to 50 percent of the unit
Landform(s): escarpment on moraine
Slope gradient: 15 to 40 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
A1,A2,A3 -- 0 to 32 in	loam	moderate	6.4 to 7.0 in	6.1 to 7.3	
Bw -- 32 to 40 in	loam	moderate	1.3 to 1.5 in	6.1 to 7.3	
C1,C2 -- 40 to 80 in	loam	moderate	6.0 to 7.6 in	7.4 to 8.4	

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

L155A--Okoboji mucky silty clay loam, ponded, 0 to 1 percent slopes

Okoboji, ponded

Extent: 75 to 90 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 1 percent

Parent material:

(*surface layer*): .32

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

alluvium or lacustrine sediments over till *Kw*

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Available water

Representative soil profile:

Texture

A1	--	0 to 10 in	mucky silty clay loam
A2	--	10 to 52 in	silty clay loam
Bg	--	52 to 60 in	silty clay loam

Permeability

moderate	2.2 to 2.5 in	6.1 to 7.8
moderately slow	7.6 to 8.4 in	6.6 to 7.8
moderately slow	1.4 to 1.6 in	6.6 to 7.8

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L156C2--Omsrud-Storden-Pilot Grove complex, 6 to 12 percent slopes, moderately eroded

Omsrud, moderately eroded

Extent: 30 to 50 percent of the unit

Landform(s): hill on moraine

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Representative soil profile:

	Texture
Ap -- 0 to 9 in	loam
Bw -- 9 to 19 in	clay loam
Bk -- 19 to 36 in	loam
C -- 36 to 80 in	loam

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Permeability	Available water	pH
moderate	1.8 to 2.0 in	5.6 to 7.3
moderate	1.7 to 1.9 in	5.6 to 7.3
moderate	2.5 to 3.2 in	7.4 to 8.4
moderate	6.6 to 8.4 in	7.4 to 8.4

Storden, moderately eroded

Extent: 15 to 50 percent of the unit

Landform(s): hill on moraine

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Representative soil profile:

	Texture
Ap -- 0 to 7 in	loam
Bk -- 7 to 55 in	loam
C -- 55 to 80 in	loam

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Permeability	Available water	pH
moderate	1.4 to 1.6 in	7.4 to 8.4
moderate	7.2 to 9.1 in	7.4 to 8.4
moderate	3.7 to 4.7 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L156C2--Omsrud-Storden-Pilot Grove complex, 6 to 12 percent slopes, moderately eroded

Pilot Grove

Extent: 15 to 25 percent of the unit

Landform(s): hill on moraine

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash over till Kw (surface layer): .20

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap,A -- 0 to 9 in	sandy loam	moderately rapid	1.2 to 1.6 in	5.6 to 7.3
Bw1 -- 9 to 17 in	sandy loam	moderately rapid	1.0 to 1.4 in	5.6 to 7.3
2BC -- 17 to 21 in	loamy sand	rapid	0.1 to 0.2 in	5.6 to 7.3
2C -- 21 to 58 in	gravelly coarse sand	rapid	0.7 to 1.5 in	6.6 to 8.4
3C -- 58 to 80 in	loam	moderate	3.3 to 4.2 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L156D2--Omsrud-Storden-Pilot Grove complex, 12 to 18 percent slopes, moderately eroded

Omsrud, moderately eroded

Extent: 30 to 60 percent of the unit

Landform(s): hill on moraine

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Representative soil profile:

	Texture
Ap -- 0 to 9 in	loam
Bw -- 9 to 19 in	clay loam
Bk -- 19 to 36 in	loam
C -- 36 to 80 in	loam

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Permeability	Available water	pH
moderate	1.8 to 2.0 in	5.6 to 7.3
moderate	1.7 to 1.9 in	5.6 to 7.3
moderate	2.5 to 3.2 in	7.4 to 8.4
moderate	6.6 to 8.4 in	7.4 to 8.4

Storden, moderately eroded

Extent: 15 to 30 percent of the unit

Landform(s): hill on moraine

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Representative soil profile:

	Texture
Ap -- 0 to 7 in	loam
Bk -- 7 to 55 in	loam
C -- 55 to 80 in	loam

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Permeability	Available water	pH
moderate	1.4 to 1.6 in	7.4 to 8.4
moderate	7.2 to 9.1 in	7.4 to 8.4
moderate	3.7 to 4.7 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L156D2--Omsrud-Storden-Pilot Grove complex, 12 to 18 percent slopes, moderately eroded

Pilot Grove

Extent: 15 to 20 percent of the unit
Landform(s): hill on moraine
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

Representative soil profile:	Texture	Permeability	Available water	
				pH
Ap,A -- 0 to 9 in	sandy loam	moderately rapid	1.2 to 1.6 in	5.6 to 7.3
Bw1 -- 9 to 17 in	sandy loam	moderately rapid	1.0 to 1.4 in	5.6 to 7.3
2BC -- 17 to 21 in	loamy sand	rapid	0.1 to 0.2 in	5.6 to 7.3
2C -- 21 to 58 in	gravelly coarse sand	rapid	0.7 to 1.5 in	6.6 to 8.4
3C -- 58 to 80 in	loam	moderate	3.3 to 4.2 in	7.4 to 8.4

L157A--Lowlein loam, 0 to 2 percent slopes

Lowlein

Extent: 65 to 85 percent of the unit
Landform(s): moraine, stream terrace
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
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
outwash over till Kw (surface layer): .20
Land capability class, nonirrigated: 1
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

Representative soil profile:	Texture	Permeability	Available water	
				pH
Ap,A -- 0 to 14 in	loam	moderately rapid	1.8 to 2.1 in	6.1 to 7.3
Bw1 -- 14 to 24 in	loam	moderately rapid	1.2 to 1.4 in	6.1 to 7.3
Bw2 -- 24 to 31 in	loamy sand	rapid	0.4 to 0.8 in	6.1 to 7.3
2C -- 31 to 60 in	loam	moderate	4.3 to 5.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L158B--Round lake sandy loam, 1 to 6 percent slopes

Round lake

Extent: 70 to 85 percent of the unit

Landform(s): hill on moraine

Slope gradient: 1 to 6 percent

Parent material:

(*surface layer*): .20

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash over lacustrine silty sediments Kw

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 11 in	sandy loam	moderately rapid	1.4 to 2.0 in	5.6 to 7.3
Bw --	11 to 14 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.6 to 7.3
2Bw --	14 to 26 in	loamy coarse sand	rapid	0.2 to 0.5 in	5.6 to 7.3
2Bk --	26 to 35 in	gravelly coarse sand	rapid	0.2 to 0.4 in	6.6 to 8.4
2C --	35 to 48 in	coarse sand	rapid	0.3 to 0.5 in	6.6 to 8.4
3Cg --	48 to 80 in	silt loam	moderate	5.1 to 7.0 in	7.4 to 8.4

L159A--Knoke mucky silty clay loam, depressional, 0 to 1 percent slopes

Knoke, depressional

Extent: 70 to 90 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

lacustrine sediments Kw (*surface layer*): .32

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 10 in	mucky silty clay loam	moderately slow	2.1 to 2.3 in	7.4 to 8.4
A --	10 to 42 in	silty clay loam	moderately slow	6.8 to 7.4 in	7.4 to 8.4
Cg --	42 to 80 in	silty clay loam	moderately slow	6.8 to 7.6 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L160B--Dickinson sandy loam, loamy substratum, 1 to 6 percent slopes

Dickinson, loamy substratum

Extent: 70 to 90 percent of the unit

Landform(s): hill on moraine, hill on outwash plain

Slope gradient: 1 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86
outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,AB --	0 to 16 in	sandy loam	moderately rapid	1.9 to 2.4 in	5.6 to 7.3
Bw --	16 to 30 in	fine sandy loam	moderately rapid	1.7 to 2.1 in	5.1 to 6.5
C1 --	30 to 47 in	loamy sand	rapid	0.3 to 0.7 in	5.6 to 7.8
C2 --	47 to 76 in	sand	rapid	0.6 to 1.2 in	5.6 to 7.8
2C --	76 to 80 in	loam	moderate	0.6 to 0.7 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L161C--Estherville-Pilot Grove complex, 6 to 12 percent slopes

Estherville

Extent: 15 to 65 percent of the unit
Landform(s): hill on outwash plain, hill on stream terrace
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap,A --	0 to 13 in	sandy loam	moderately rapid	1.7 to 2.3 in	5.6 to 7.3	
Bw1 --	13 to 18 in	sandy loam	moderately rapid	0.6 to 0.9 in	5.6 to 7.3	
2Bw2 --	18 to 23 in	loamy coarse sand	rapid	0.1 to 0.2 in	5.6 to 7.3	
2C --	23 to 60 in	gravelly coarse sand	rapid	0.7 to 1.5 in	6.6 to 8.4	

Pilot Grove

Extent: 15 to 65 percent of the unit
Landform(s): hill on moraine
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: somewhat excessively drained

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

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap --	0 to 9 in	sandy loam	moderately rapid	1.2 to 1.6 in	5.6 to 7.3	
Bw --	9 to 17 in	sandy loam	moderately rapid	1.0 to 1.4 in	5.6 to 7.3	
2Bw --	17 to 22 in	loamy coarse sand	rapid	0.1 to 0.2 in	5.6 to 7.3	
2C1 --	22 to 39 in	gravelly coarse sand	rapid	0.3 to 0.7 in	6.6 to 8.4	
2C2 --	39 to 55 in	gravelly coarse sand	rapid	0.3 to 0.6 in	6.6 to 8.4	
3C --	55 to 80 in	silt loam	moderate	4.0 to 5.5 in	7.4 to 8.4	

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L162B--Clarion-Round lake complex, 2 to 6 percent slopes

Clarion

Extent: 40 to 60 percent of the unit
Landform(s): hill on moraine
Slope gradient: 2 to 5 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.8 to 3.1 in	5.6 to 7.3
Bw -- 14 to 33 in	loam	moderate	3.2 to 3.6 in	5.6 to 7.3
Bk -- 33 to 60 in	loam	moderate	4.0 to 5.1 in	7.4 to 8.4

Round lake

Extent: 15 to 50 percent of the unit
Landform(s): hill on moraine
Slope gradient: 2 to 6 percent
Parent material:
Kw (surface layer):
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 outwash over till or lacustrine silty sediments
 .20
Land capability class, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential frost action: low
Available water

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.4 to 2.0 in	5.6 to 7.3
Bw -- 11 to 14 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.6 to 7.3
2Bw -- 14 to 26 in	loamy coarse sand	rapid	0.2 to 0.5 in	5.6 to 7.3
2Bk -- 26 to 35 in	gravelly coarse sand	rapid	0.2 to 0.4 in	6.6 to 8.4
2C -- 35 to 48 in	coarse sand	rapid	0.3 to 0.5 in	6.6 to 8.4
3Cg -- 48 to 80 in	silt loam	moderate	5.1 to 7.0 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

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

Okoboji, depressional

Extent: 70 to 95 percent of the unit

Landform(s): lake plain, moraine

Slope gradient: 0 to 1 percent

Parent material:

layer): .32

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

lacustrine sediments over till *Kw* (surface

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Ap,A --	0 to 26 in	silty clay loam
Bg --	26 to 42 in	silty clay
Cg --	42 to 60 in	silty clay loam

Permeability

moderately slow	5.5 to 6.0 in	6.1 to 7.8
moderately slow	2.9 to 3.2 in	6.6 to 7.8
moderately slow	3.2 to 3.5 in	6.6 to 8.4

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

L170B--Estherville-Round lake complex, 2 to 6 percent slopes

Estherville

Extent: 35 to 70 percent of the unit

Landform(s): hill on moraine

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Representative soil profile:

		Texture
Ap,A --	0 to 13 in	sandy loam
Bw1 --	13 to 18 in	sandy loam
2Bw2 --	18 to 23 in	loamy coarse sand
2C --	23 to 60 in	gravelly coarse sand

Permeability	Available water	
		pH
moderately rapid	1.7 to 2.3 in	5.6 to 7.3
moderately rapid	0.6 to 0.9 in	5.6 to 7.3
rapid	0.1 to 0.2 in	5.6 to 7.3
rapid	0.7 to 1.5 in	6.6 to 8.4

Round lake

Extent: 15 to 50 percent of the unit

Landform(s): hill on moraine

Slope gradient: 2 to 6 percent

Parent material:

(*surface layer*): .20

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash lacustrine silty sediments *Kw*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Representative soil profile:

		Texture
Ap --	0 to 11 in	sandy loam
Bw --	11 to 14 in	sandy loam
2Bw --	14 to 26 in	loamy coarse sand
2Bk --	26 to 35 in	gravelly coarse sand
2C --	35 to 48 in	coarse sand
3Cg --	48 to 80 in	silt loam

Permeability	Available water	
		pH
moderately rapid	1.4 to 2.0 in	5.6 to 7.3
moderately rapid	0.4 to 0.6 in	5.6 to 7.3
rapid	0.2 to 0.5 in	5.6 to 7.3
rapid	0.2 to 0.4 in	6.6 to 8.4
rapid	0.3 to 0.5 in	6.6 to 8.4
moderate	5.1 to 7.0 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

M-W--Water, miscellaneous

Water, miscellaneous

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

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
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P1B--Annieville silty clay loam, 2 to 5 percent slopes

Annieville

Extent: 75 to 85 percent of the unit
Landform(s): hill on till plain
Slope gradient: 2 to 5 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
loess over till Kw (surface layer): .32
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
Ap,A,AB -- 0 to 11 in	silty clay loam	moderate	2.3 to 2.5 in	6.1 to 7.3
Bw1-3 -- 11 to 52 in	silty clay loam	moderate	7.4 to 8.2 in	6.1 to 7.3
2BC1 -- 52 to 57 in	sandy loam	moderately rapid	0.4 to 0.7 in	6.6 to 7.8
2BC2,2BC3 -- 57 to 80 in	clay loam	moderately slow	3.2 to 4.1 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

P7A--Comfrey clay loam, 0 to 2 percent slopes, occasionally flooded

Comfrey, occasionally flooded

Extent: 75 to 85 percent of the unit

Landform(s): flat on flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

alluvium *Kw (surface layer):* .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

A1,A2 --	0 to 26 in	clay loam
Bg --	26 to 35 in	clay loam
BCg,Cg --	35 to 60 in	clay loam

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderate	4.7 to 5.7 in	6.6 to 7.3
moderate	1.4 to 1.8 in	6.6 to 7.3
moderate	3.7 to 4.7 in	6.6 to 8.4

P9A--Gillett Grove silty clay loam, 0 to 2 percent slopes

Gillett Grove

Extent: 80 to 90 percent of the unit

Landform(s): hill on till plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess *Kw (surface layer):* .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap, A1,2 --	0 to 17 in	silty clay loam
BA,Bg1-3 --	17 to 44 in	silty clay loam
BCg --	44 to 57 in	silt loam
2Cg --	57 to 80 in	loam

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderate	3.6 to 3.9 in	6.1 to 7.3
moderate	4.9 to 5.4 in	6.1 to 7.3
moderate	2.6 to 2.9 in	7.9 to 8.4
moderately slow	3.2 to 4.1 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P12B--Everly silty clay loam, 2 to 6 percent slopes

Everly

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over tillKw (surface layer): .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 10 in	silty clay loam
Bw --	10 to 18 in	silty clay loam
2Bk,2BC --	18 to 80 in	clay loam

moderate	1.7 to 1.9 in	6.1 to 7.3
moderate	1.2 to 1.4 in	6.1 to 7.3
moderately slow	8.7 to 11.1 in	7.4 to 8.4

P12C2--Everly silty clay loam, 6 to 12 percent slopes, moderately eroded

Everly, moderately eroded

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over tillKw (surface layer): .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 7 in	silty clay loam
Bw --	7 to 16 in	silty clay loam
2Bk,2BC --	16 to 80 in	clay loam

moderate	1.2 to 1.3 in	6.1 to 7.3
moderate	1.4 to 1.5 in	6.1 to 7.3
moderately slow	8.9 to 11.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

P15B--Galva silty clay loam, 2 to 5 percent slopes

Galva

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 2 to 5 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess *Kw (surface layer):* .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap,A --	0 to 11 in	silty clay loam
BA,Bw1,2 --	11 to 31 in	silty clay loam
BC --	31 to 45 in	silt loam
C --	45 to 60 in	silt loam

Permeability

moderate
moderate
moderate
moderate

Available water

pH

2.1 to 2.4 in	6.1 to 7.3
3.4 to 4.0 in	6.1 to 7.3
2.3 to 2.8 in	6.1 to 7.3
2.5 to 3.0 in	7.4 to 8.4

P20B--Judson silt loam, 3 to 8 percent slopes

Judson

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 3 to 8 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

colluvium *Kw (surface layer):* .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap,A --	0 to 36 in	silt loam
Bw1,Bw2 --	36 to 56 in	silty clay loam
C --	56 to 60 in	silty clay loam

Permeability

moderate
moderate
moderate

Available water

pH

6.8 to 7.9 in	6.1 to 7.3
3.8 to 4.4 in	6.1 to 7.3
0.7 to 0.8 in	6.6 to 7.8

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P21A--Marcus silty clay loam, 0 to 2 percent slopes

Marcus

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess *Kw (surface layer):* .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap, A1,2 --	0 to 17 in	silty clay loam
BA, Bg1-3 --	17 to 44 in	silty clay loam
Cg1 --	44 to 57 in	silt loam
2Cg2 --	57 to 60 in	loam

moderately slow	3.6 to 3.9 in	6.1 to 7.3
moderately slow	4.9 to 5.4 in	6.1 to 7.3
moderately slow	2.6 to 2.9 in	7.9 to 8.4
moderately slow	0.5 to 0.5 in	7.9 to 8.4

P27A--Primghar silty clay loam, 1 to 3 percent slopes

Primghar

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess *Kw (surface layer):* .28

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap, A1, A2 --	0 to 21 in	silty clay loam
Bw1, 2, 3 --	21 to 42 in	silty clay loam
C --	42 to 60 in	silty clay loam

moderate	4.0 to 4.6 in	6.1 to 7.3
moderate	3.6 to 4.3 in	6.1 to 7.3
moderate	3.0 to 3.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P28A--Ransom silty clay loam, 1 to 3 percent slopes

Ransom

Extent: 75 to 85 percent of the unit
Landform(s): hill on till plain
Slope gradient: 1 to 3 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
loess over tillKw (surface layer): .32
Land capability class, nonirrigated: 1
Hydric soil: no
Hydrologic group: B
Potential frost action: high
Available water

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap,A,AB -- 0 to 16 in	silty clay loam	moderate	2.9 to 3.6 in	6.6 to 7.3
Bw1-3 -- 16 to 33 in	silty clay loam	moderate	2.7 to 3.2 in	6.6 to 7.3
2BCk,2BC -- 33 to 80 in	clay loam	moderately slow	6.6 to 8.4 in	7.4 to 8.4

P29A--Rushmore silty clay loam, 0 to 2 percent slopes

Rushmore

Extent: 75 to 85 percent of the unit
Landform(s): hill on till plain
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
loess over tillKw (surface layer): .28
Land capability class, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: B/D
Potential frost action: high
Available water

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
				<i>pH</i>
Ap,A,AB -- 0 to 18 in	silty clay loam	moderate	3.3 to 4.0 in	6.6 to 7.3
Bg1,2 -- 18 to 24 in	silty clay loam	moderate	0.9 to 1.1 in	6.6 to 7.3
BCg -- 24 to 32 in	silty clay loam	moderate	1.3 to 1.5 in	7.4 to 7.8
2BCkg,2BCg - 32 to 80 in	clay loam	moderately slow	6.7 to 8.6 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P30B--Sac silty clay loam, 2 to 5 percent slopes

Sac

Extent: 75 to 85 percent of the unit

Landform(s): hill on till plain

Slope gradient: 2 to 5 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over till Kw (surface layer): .32

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap,A --	0 to 11 in	silty clay loam
BA,Bw1 --	11 to 28 in	silty clay loam
2Bw2 --	28 to 33 in	clay loam
2BCK,2BC --	33 to 60 in	clay loam

Permeability

moderate
moderate
moderately slow
moderately slow

Available water

pH

2.3 to 2.5 in	6.1 to 7.3
3.0 to 3.4 in	6.1 to 7.3
0.7 to 0.9 in	6.1 to 7.3
3.7 to 4.8 in	7.4 to 8.4

P31A--Spicer silty clay loam, 0 to 2 percent slopes

Spicer

Extent: 80 to 90 percent of the unit

Landform(s): hill on till plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

loess Kw (surface layer): .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Ap,A,AB --	0 to 17 in	silty clay loam
Bg1,Bg2 --	17 to 35 in	silty clay loam
Cg --	35 to 60 in	silty clay loam

Permeability

moderate
moderate
moderate

Available water

pH

3.0 to 4.1 in	7.4 to 8.4
2.9 to 4.0 in	7.4 to 8.4
4.0 to 5.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P33A--Spillco silt loam, 0 to 2 percent slopes, occasionally flooded

Spillco, occasionally flooded

Extent: 80 to 90 percent of the unit

Landform(s): flat on flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

alluvium *Kw (surface layer):* .24

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

A1 -- 0 to 10 in silt loam
A2 -- 10 to 22 in silt loam
A3,A4,C -- 22 to 60 in loam

moderate 1.9 to 2.1 in 6.6 to 7.3
moderate 2.3 to 2.6 in 6.6 to 8.4
moderate 7.2 to 7.9 in 6.6 to 8.4

P36A--Talcot silty clay loam, 0 to 2 percent slopes, occasionally flooded

Talcot, occasionally flooded

Extent: 80 to 90 percent of the unit

Landform(s): flat on outwash plain

Slope gradient: 0 to 2 percent

Parent material:

.28

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

alluvium over outwash *Kw (surface layer):*

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A1,A2 -- 0 to 22 in silty clay loam
Bg -- 22 to 33 in silty clay loam
2Cg -- 33 to 60 in coarse sand

moderate 4.0 to 4.9 in 7.4 to 8.4
moderate 1.9 to 2.2 in 7.4 to 8.4
rapid 0.5 to 1.1 in 7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P37D--Talmo gravelly sandy loam, 6 to 35 percent slopes

Talmo

Extent: 85 to 95 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 6 to 35 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

outwash *Kw (surface layer):* .10

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 9 in	gravelly sandy loam
AC --	9 to 12 in	gravelly loamy sand
C1,C2 --	12 to 60 in	very gravelly sand

Permeability

moderately rapid	0.9 to 1.1 in	6.1 to 8.4
rapid	0.1 to 0.1 in	7.4 to 8.4
rapid	1.0 to 1.9 in	7.4 to 8.4

Available water

pH

P38B--Thurman sandy loam, 2 to 6 percent slopes

Thurman

Extent: 85 to 95 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

Ap,A --	0 to 13 in	sandy loam
AC --	13 to 18 in	sandy loam
C1,C2 --	18 to 60 in	sand

Permeability

moderately rapid	1.7 to 1.9 in	6.1 to 6.5
moderately rapid	0.6 to 0.7 in	6.1 to 7.3
rapid	0.8 to 2.9 in	6.1 to 7.8

Available water

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P38C--Thurman sandy loam, 6 to 12 percent slopes

Thurman

Extent: 85 to 95 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap,A --	0 to 10 in	sandy loam	moderately rapid	1.3 to 1.5 in	6.1 to 6.5	
AC --	10 to 20 in	sandy loam	moderately rapid	1.2 to 1.4 in	6.1 to 7.3	
C1,C2 --	20 to 60 in	sand	rapid	0.8 to 2.8 in	6.1 to 7.8	

P43A--Wilmonton silty clay loam, 1 to 3 percent slopes

Wilmonton

Extent: 80 to 90 percent of the unit

Landform(s): hill on till plain

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over till *Kw (surface layer):* .28

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>		<i>pH</i>
Ap,A --	0 to 15 in	silty clay loam	moderate	3.0 to 3.9 in	6.1 to 7.3	
Bw --	15 to 20 in	loam	moderate	0.9 to 1.2 in	6.1 to 7.3	
2Bw --	20 to 25 in	clay loam	moderately slow	0.7 to 0.9 in	6.1 to 7.3	
2Bk --	25 to 55 in	clay loam	moderately slow	4.2 to 5.4 in	7.4 to 8.4	
2BC1,2 --	55 to 80 in	clay loam	moderately slow	3.5 to 4.5 in	7.4 to 8.4	

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P45E--Moneta clay loam, 15 to 45 percent slopes

Moneta

Extent: 80 to 90 percent of the unit

Landform(s): hill on till plain

Slope gradient: 15 to 45 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
A -- 0 to 9 in	clay loam	moderately slow	1.3 to 1.6 in	7.4 to 8.4
BA -- 9 to 13 in	clay loam	moderately slow	0.6 to 0.7 in	7.4 to 8.4
Bk1-3,BC1 -- 13 to 53 in	clay loam	moderately slow	5.6 to 7.2 in	7.4 to 8.4
BC2 -- 53 to 80 in	clay loam	moderately slow	3.7 to 4.8 in	7.4 to 8.4

P48A--Allendorf silty clay loam, 0 to 2 percent slopes

Allendorf

Extent: 80 to 90 percent of the unit

Landform(s): flat on outwash plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over outwash *Kw (surface layer):* .28

Land capability class, nonirrigated: 2s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
Ap,A -- 0 to 14 in	silty clay loam	moderate	2.7 to 3.1 in	6.1 to 7.3
Bw1,2,3 -- 14 to 34 in	silty clay loam	moderate	3.3 to 3.9 in	6.1 to 7.3
2BC,2C1 -- 34 to 60 in	very gravelly loamy coarse sand	very rapid	0.5 to 1.0 in	6.1 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P48B--Allendorf silty clay loam, 2 to 6 percent slopes

Allendorf

Extent: 80 to 90 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over outwash Kw (surface layer): .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 13 in	silty clay loam	moderate	2.5 to 2.9 in	6.1 to 7.3
Bw1,2,3 --	13 to 34 in	silty clay loam	moderate	3.5 to 4.2 in	6.1 to 7.3
2BC,2C1 --	34 to 60 in	very gravelly loamy coarse sand	very rapid	0.5 to 1.0 in	6.1 to 8.4

P49A--Comfrey clay loam, 0 to 2 percent slopes, frequently flooded

Comfrey, frequently flooded

Extent: 80 to 90 percent of the unit

Landform(s): flat on flood plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

alluvium Kw (surface layer): .28

Land capability class, nonirrigated: 5w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Available water

Representative soil profile:

Texture

Permeability

pH

A --	0 to 40 in	clay loam	moderate	7.2 to 8.8 in	6.6 to 7.3
Cg --	40 to 60 in	clay loam	moderate	3.0 to 3.7 in	6.6 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P50B--Everly-Kanaranzi complex, 2 to 6 percent slopes

Everly

Extent: 55 to 65 percent of the unit

Landform(s): hill on till plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over tillKw (surface layer): .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 15 in	silty clay loam
Bw --	15 to 26 in	silty clay loam
2Bw --	26 to 44 in	clay loam
2Bk,2Bck --	44 to 80 in	clay loam

	<i>Available water</i>	
moderate	2.5 to 2.8 in	6.1 to 7.3
moderate	1.7 to 1.9 in	6.1 to 7.3
moderately slow	2.5 to 3.3 in	6.1 to 7.3
moderately slow	5.0 to 6.4 in	7.4 to 8.4

Kanaranzi

Extent: 20 to 30 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over outwashKw (surface layer): .32

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap,A --	0 to 10 in	silt loam
Bw --	10 to 16 in	loam
2C --	16 to 80 in	very gravelly sand

	<i>Available water</i>	
moderate	2.2 to 2.4 in	6.1 to 7.3
moderate	1.3 to 1.4 in	6.1 to 7.3
rapid	1.3 to 2.6 in	6.1 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P51C2--Everly-Moneta-Talmo complex, 6 to 12 percent slopes, moderately

Everly, moderately eroded

Extent: 35 to 45 percent of the unit

Landform(s): hill on till plain

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over till Kw (surface layer): .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 8 in	silty clay loam
Bw --	8 to 26 in	silty clay loam
2Bk,2BC --	26 to 80 in	clay loam

moderate	1.3 to 1.5 in	6.1 to 7.3
moderate	2.7 to 3.1 in	6.1 to 7.3
moderately slow	7.6 to 9.7 in	7.4 to 8.4

Moneta, moderately eroded

Extent: 15 to 25 percent of the unit

Landform(s): hill on till plain

Slope gradient: 8 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till Kw (surface layer): .32

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 8 in	clay loam
Bk --	8 to 38 in	clay loam
BC --	38 to 80 in	clay loam

moderately slow	1.1 to 1.4 in	7.4 to 8.4
moderately slow	4.2 to 5.5 in	7.4 to 8.4
moderately slow	5.8 to 7.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P51C2--Everly-Moneta-Talmo complex, 6 to 12 percent slopes, moderately

Talmo, moderately eroded

Extent: 15 to 25 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

outwash *Kw (surface layer):* .10

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Available water

Representative soil profile:

Texture

A --	0 to 6 in	gravelly sandy loam
C --	6 to 60 in	very gravelly sand

Permeability

moderately rapid
rapid

Available water

0.6 to 0.7 in
1.1 to 2.2 in

pH

6.1 to 8.4
7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P52D2--Moneta-Everly-Talmo complex, 12 to 18 percent slopes, moderately

Moneta, moderately eroded

Extent: 35 to 45 percent of the unit

Landform(s): hill on till plain

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

A --	0 to 7 in	clay loam
Bk --	7 to 30 in	clay loam
BCK --	30 to 80 in	clay loam

Permeability

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderately slow	1.0 to 1.3 in	7.4 to 8.4
moderately slow	3.2 to 4.1 in	7.4 to 8.4
moderately slow	7.0 to 9.0 in	7.4 to 8.4

Everly, moderately eroded

Extent: 15 to 25 percent of the unit

Landform(s): hill on till plain

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over till *Kw (surface layer):* .24

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Ap --	0 to 8 in	silty clay loam
Bw --	8 to 16 in	silty clay loam
2Bw --	16 to 38 in	clay loam
2Bk,2BC --	38 to 80 in	clay loam

Permeability

<i>Permeability</i>	<i>Available water</i>	<i>pH</i>
moderate	1.3 to 1.5 in	6.1 to 7.3
moderate	1.2 to 1.4 in	6.1 to 7.3
moderately slow	3.1 to 4.0 in	6.7 to 7.3
moderately slow	5.8 to 7.5 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P52D2--Moneta-Everly-Talmo complex, 12 to 18 percent slopes, moderately

Talmo, moderately eroded

Extent: 15 to 25 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

outwash *Kw (surface layer):* .10

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Available water

Representative soil profile:

Texture

A --	0 to 8 in	gravelly sandy loam
C --	8 to 60 in	very gravelly sand

Permeability

moderately rapid	0.8 to 0.9 in	6.1 to 8.4
rapid	1.0 to 2.1 in	7.4 to 8.4

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P53C2--Everly-Moneta complex, 6 to 12 percent slopes, moderately eroded

Everly, moderately eroded

Extent: 50 to 60 percent of the unit

Landform(s): hill on till plain

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over till Kw (surface layer): .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 10 in	silty clay loam
Bw --	10 to 20 in	silty clay loam
2Bk,2BC --	20 to 80 in	clay loam

moderate	1.7 to 1.9 in	6.1 to 7.3
moderate	1.5 to 1.7 in	6.1 to 7.3
moderately slow	8.4 to 10.8 in	7.4 to 8.4

Moneta, moderately eroded

Extent: 20 to 30 percent of the unit

Landform(s): hill on till plain

Slope gradient: 8 to 12 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

till Kw (surface layer): .32

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water

Representative soil profile:

Texture

Permeability

pH

Ap --	0 to 7 in	clay loam
Bk --	7 to 33 in	clay loam
BC --	33 to 80 in	clay loam

moderately slow	1.0 to 1.3 in	7.4 to 8.4
moderately slow	3.6 to 4.7 in	7.4 to 8.4
moderately slow	6.6 to 8.4 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

P54D2--Moneta-Everly complex, 12 to 18 percent slopes, moderately eroded

Moneta, moderately eroded

Extent: 40 to 50 percent of the unit
Landform(s): hill on till plain
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
 till *Kw (surface layer):* .32
Land capability class, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate
Available water

Representative soil profile:

	Texture	Permeability	Available water	pH
A -- 0 to 9 in	clay loam	moderately slow	1.3 to 1.6 in	7.4 to 8.4
BA -- 9 to 13 in	clay loam	moderately slow	0.6 to 0.7 in	7.4 to 8.4
Bk1-3,BC1 -- 13 to 53 in	clay loam	moderately slow	5.6 to 7.2 in	7.4 to 8.4
BC2 -- 53 to 80 in	clay loam	moderately slow	3.7 to 4.8 in	7.4 to 8.4

Everly, moderately eroded

Extent: 35 to 45 percent of the unit
Landform(s): hill on till plain
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:

	Texture	Permeability	Available water	pH
Ap -- 0 to 10 in	silty clay loam	moderate	1.7 to 1.9 in	6.1 to 7.3
Bw -- 10 to 15 in	silty clay loam	moderate	0.8 to 0.9 in	6.1 to 7.3
2Bw -- 15 to 44 in	clay loam	moderately slow	4.1 to 5.2 in	6.7 to 7.3
2Bk,2BC -- 44 to 80 in	clay loam	moderately slow	5.0 to 6.4 in	7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

Map Unit Description (MN)

Nobles County, Minnesota

P55A--Kato silty clay loam, 0 to 2 percent slopes

Kato

Extent: 85 to 95 percent of the unit

Landform(s): flat on outwash plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

loess over outwashKw (surface layer): .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Ap,A,AB --	0 to 21 in	silty clay loam
Bg1,Bg2 --	21 to 31 in	silty clay loam
2BCg --	31 to 35 in	sandy loam
2Cg1,2Cg2 --	35 to 60 in	coarse sand

Permeability

moderate	4.2 to 4.6 in	6.1 to 7.3
moderate	2.0 to 2.3 in	6.1 to 7.3
rapid	0.5 to 0.6 in	6.1 to 7.3
rapid	0.5 to 1.0 in	7.4 to 8.4

Available water

pH

P56A--Kanaranzi silt loam, 0 to 2 percent slopes

Kanaranzi

Extent: 75 to 85 percent of the unit

Landform(s): flat on outwash plain

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over outwashKw (surface layer): .32

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 7 in	silt loam
BA,Bw --	7 to 20 in	loam
2C1-3 --	20 to 80 in	very gravelly coarse sand

Permeability

moderate	1.6 to 1.7 in	6.1 to 7.3
moderate	2.6 to 2.9 in	6.1 to 7.3
rapid	1.2 to 2.4 in	6.1 to 8.4

Available water

pH

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Map Unit Description (MN)

Nobles County, Minnesota

P56B--Kanmaranzi silt loam, 2 to 6 percent slopes

Kanmaranzi

Extent: 75 to 85 percent of the unit

Landform(s): hill on outwash plain

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loess over outwash Kw (surface layer): .32

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

		<i>Texture</i>
Ap --	0 to 7 in	silt loam
BA,Bw --	7 to 20 in	loam
2C1-3 --	20 to 80 in	gravelly coarse sand

Permeability

	<i>Available water</i>	<i>pH</i>
moderate	1.6 to 1.7 in	6.1 to 7.3
moderate	2.6 to 2.9 in	6.1 to 7.3
rapid	1.2 to 2.4 in	6.1 to 8.4

U3B--Udorthents (cut and fill land), 0 to 6 percent slopes

Udorthents (cut and fill land)

Extent: 100 percent of the unit

Landform(s): moraine

Slope gradient: 0 to 6 percent

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

variable loamy material Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil:

Hydrologic group:

Potential frost action:

Representative soil profile:

Texture

Permeability

Available water

pH

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

U7--Udorthents, shallow (sanitary landfill)

Udorthents, shallow, sanitary landfill

Extent: 100 percent of the unit
Landform(s): moraine
Slope gradient: 0 to 20 percent
Parent material:
Restrictive feature(s):
Flooding:
Ponding:
Drainage class:

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>pH</i>
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U15A--Havelock clay loam, 0 to 2 percent slopes, frequently flooded

Havelock, frequently flooded

Extent: 75 to 85 percent of the unit
Landform(s): flat on flood plain
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: frequent
Ponding: none
Drainage class: poorly drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>pH</i>
A1,A2 -- 0 to 32 in clay loam		moderate	5.4 to 7.3 in 7.4 to 8.4
Cg -- 32 to 60 in clay loam		moderate	4.8 to 5.6 in 7.4 to 8.4

This report shows only the major soils in each map unit. Others may exist.

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Map Unit Description (MN)

Nobles County, Minnesota

U24A--Havelock clay loam, 0 to 2 percent slopes, occasionally flooded

Havelock, occasionally flooded

Extent: 75 to 85 percent of the unit
Landform(s): flat on flood plain
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: occasional
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:

Ap,A1,A2 --	0 to 32 in	clay loam
Bg --	32 to 60 in	clay loam

Texture

Permeability

moderate	5.4 to 7.3 in	7.4 to 8.4
moderate	4.8 to 5.6 in	7.4 to 8.4

pH

W--Water

Water

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

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

Representative soil profile:

Texture

Permeability

pH

This report shows only the major soils in each map unit. Others may exist.