

Soil Descriptions - Non Technical

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AaA--Alluvial Land, 0 To 2 Percent Slopes

Component Description

Alluvial land

Extent: 90 percent of the unit

Geomorphic description:

Flood plain

Slope range: 0 to 2 percent

Surface layer texture: Loam

Drainage class: Moderately well drained

Parent material:

Alluvium

Flooding does not occur (months):

January February September October November December

Flooding is most likely (frequency, months):

Occasional March April May June July August

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

3.3 feet February August

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 10 inches; loam

Al--10 to 60 inches; stratified sand to silt loam

AaB--Alluvial Land, 2 To 6 Percent Slopes

Component Description

Alluvial land

Extent: 90 percent of the unit

Geomorphic description:

Flood plain

Slope range: 2 to 6 percent

Surface layer texture: Loam

Drainage class: Moderately well drained

Parent material:

Alluvium

Flooding does not occur (months):

January February September October November December

Flooding is most likely (frequency, months):

Occasional March April May June July August

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

3.3 feet February August

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 10 inches; loam

Al--10 to 60 inches; stratified sand to silt loam

Ab--Alluvial Land, Frequent Overflow, 0 To 6 Percent Slopes

Component Description

Alluvial land, frequent overflow  
Extent: 90 percent of the unit  
Geomorphic description:  
Flood plain  
Slope range: 0 to 6 percent  
Surface layer texture: Loam  
Drainage class: Moderately well drained  
Parent material:  
Alluvium  
Flooding does not occur (months):  
January February September October November December  
Flooding is most likely (frequency, months):  
Frequent March April May June  
Wet soil moisture status is highest (depth, months):  
0.5 foot April  
Wet soil moisture status is lowest (depth, months):  
3.3 feet February August  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 3.5 percent  
Typical profile:  
A1--0 to 10 inches; loam  
A2--10 to 60 inches; stratified sand to silt loam

Ba--Beach Materials, Sandy

Component Description

Beach materials, sandy  
Extent: 90 percent of the unit  
Geomorphic description:  
Shoreline on lake  
Slope range: 0 to 3 percent  
Surface layer texture: Sand  
Drainage class: Moderately well drained  
Parent material:  
Sandy lacustrine  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April  
Wet soil moisture status is lowest (depth, months):  
3.3 feet February August  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.6 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:  
A--0 to 5 inches; sand  
C--5 to 60 inches; gravelly sand

Bb--Beach Materials And Muck

Component Description

Beach materials and muck  
Extent: 90 percent of the unit  
Geomorphic description:  
Shoreline on marsh

Slope range: 0 to 2 percent  
Surface layer texture: Sand  
Drainage class: Poorly drained  
Parent material:  
    Sandy lacustrine and organic material  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                   March April May June  
Wet soil moisture status is lowest (depth, months):  
    2.0 feet                         February August  
Ponding does not occur (months):  
    January February July August September October November  
    December  
Ponding is deepest (depth, months):  
    1.0 foot                         March April May  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 6.5 percent  
Typical profile:  
    A--0 to 11 inches; sand  
    C--11 to 60 inches; fine sand

**Bc--Blue Earth Mucky Silty Clay Loam, 0 To 1 Percent Slopes**

**Component Description**

Blue earth and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
    Depression on moraine  
Slope range: 0 to 1 percent  
Surface layer texture: Mucky silty clay loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
    Coprogeous earth over till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                   March April  
Wet soil moisture status is lowest (depth, months):  
    2.0 feet                         February August  
Ponding does not occur (months):  
    January February May June July August September October  
    November December  
Ponding is deepest (depth, months):  
    1.0 foot                         April  
Available water capacity to a depth of 60 inches: 11.4 inches  
Content of organic matter in the upper 10 inches: 17.5 percent  
Typical profile:  
    A1--0 to 12 inches; mucky silty clay loam  
    Cg--12 to 40 inches; clay loam  
    2Cg--40 to 60 inches; clay loam

**BdB--Kingsley, Mahtomedi And Hayden Complex, 2 To 6 Percent Slopes**

**Component Description**

Kingsley and similar soils  
Extent: 40 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 2 to 6 percent

Surface layer texture: Loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    3.6 feet                      April  
Wet soil moisture status is lowest (depth, months):  
    More than 5.0 feet          January February July August  
                                    September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
    Ap--0 to 9 inches; loam  
    Bt--9 to 31 inches; sandy loam  
    C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
    Moraine  
    Outwash plain  
Slope range: 2 to 6 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 8 inches; gravelly loamy sand  
    Bw--8 to 30 inches; sand  
    C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    3.6 feet                      April  
Wet soil moisture status is lowest (depth, months):  
    More than 5.0 feet          January February July August  
                                    September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 9 inches; loam

Bt--9 to 26 inches; loam  
C--26 to 60 inches; loam

BdC--Kingsley, Mahtomedi And Hayden Complex, 6 To 12 Percent Slopes

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 31 inches; sandy loam  
C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Outwash plain  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; gravelly loamy sand  
Bw--8 to 30 inches; sand  
C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 26 inches; loam

C--26 to 60 inches; loam

BdC2--Kingsley, Mahtomedi And Hayden Complex, 6 To 12 Percent Slopes,  
Moderately Eroded

#### Component Description

##### Kingsley and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 8.9 inches

Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 31 inches; sandy loam

C--31 to 60 inches; sandy loam

##### Mahtomedi and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Outwash plain

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Gravelly loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; gravelly loamy sand

Bw--8 to 30 inches; sand

C--30 to 60 inches; gravelly sand

##### Hayden and similar soils

Extent: 20 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 26 inches; loam  
C--26 to 60 inches; loam

BdD--Kingsley, Mahtomedi And Hayden Complex, 12 To 18 Percent Slopes

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 31 inches; sandy loam  
C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Outwash plain  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; gravelly loamy sand  
Bw--8 to 30 inches; sand  
C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit

Geomorphic description:

Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 26 inches; loam  
C--26 to 60 inches; loam

BdD2--Kingsley, Mahtomedi And Hayden Complex, 12 To 18 Percent Slopes,  
Moderately Eroded

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 31 inches; sandy loam  
C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Outwash plain  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:

Ap--0 to 8 inches; gravelly loamy sand  
Bw--8 to 30 inches; sand  
C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit

Geomorphic description:

Moraine

Slope range: 12 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 26 inches; loam

C--26 to 60 inches; loam

BdE2--Kingsley, Mahtomedi And Hayden Complex, 18 To 25 Percent Slopes

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Slope range: 18 to 25 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 8.9 inches

Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 31 inches; sandy loam

C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 18 to 25 percent

Surface layer texture: Gravelly loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 8 inches; gravelly loamy sand  
    Bw--8 to 30 inches; sand  
    C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 9 inches; loam  
    Bt--9 to 26 inches; loam  
    C--26 to 60 inches; loam

BdF--Kingsley, Mahtomedi And Hayden Complex, 25 To 50 Percent Slopes

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 25 to 40 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
    A--0 to 9 inches; loam  
    Bt--9 to 31 inches; sandy loam  
    C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
    Outwash plain  
    Moraine  
Slope range: 25 to 45 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
A--0 to 8 inches; gravelly loamy sand  
Bw--8 to 30 inches; sand  
C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 25 to 50 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
A--0 to 9 inches; loam  
Bt--9 to 26 inches; loam  
C--26 to 60 inches; loam

BeD3--Kingsley, Mahtomedi And Hayden Complex, 12 To 18 Percent Slopes,  
Severely Eroded

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 31 inches; sandy loam  
C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Outwash plain  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Gravelly loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; gravelly loamy sand  
Bw--8 to 30 inches; sand  
C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 26 inches; loam  
C--26 to 60 inches; loam

BeE3--Kingsley, Mahtomedi And Hayden Complex, 18 To 25 Percent Slopes

Component Description

Kingsley and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
Ap--0 to 9 inches; loam

Bt--9 to 31 inches; sandy loam  
C--31 to 60 inches; sandy loam

Mahtomedi and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 18 to 25 percent

Surface layer texture: Gravelly loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; gravelly loamy sand

Bw--8 to 30 inches; sand

C--30 to 60 inches; gravelly sand

Hayden and similar soils

Extent: 20 percent of the unit

Geomorphic description:

Moraine

Slope range: 18 to 25 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 26 inches; loam

C--26 to 60 inches; loam

CaB--Clarion Loam, 2 To 6 Percent Slopes

Component Description

Clarion and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December

Ponding: None  
Available water capacity to a depth of 60 inches: 11.3 inches  
Content of organic matter in the upper 10 inches: 4.5 percent  
Typical profile:  
Ap--0 to 16 inches; loam  
Bw--16 to 38 inches; clay loam  
C--38 to 60 inches; clay loam

#### CaB2--Clarion Loam, 2 To 6 Percent Slopes, Moderately Eroded

##### Component Description

Clarion and similar soils  
Extent: 85 percent of the unit  
Geomorphologic description:  
Moraine  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.1 inches  
Content of organic matter in the upper 10 inches: 4.5 percent  
Typical profile:  
Ap--0 to 11 inches; loam  
Bw--11 to 16 inches; clay loam  
C--16 to 60 inches; clay loam

#### CaC--Clarion Loam, 6 To 12 Percent Slopes

##### Component Description

Clarion and similar soils  
Extent: 85 percent of the unit  
Geomorphologic description:  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.3 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:

Ap--0 to 16 inches; loam  
Bw--16 to 38 inches; clay loam  
C--38 to 60 inches; clay loam

CaC2--Clarion Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Clarion and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 11.1 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 11 inches; loam

Bw--11 to 16 inches; clay loam

C--16 to 60 inches; clay loam

CbC3--Clarion Soils, 6 To 12 Percent Slopes, Severely Eroded

Component Description

Clarion and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 11.1 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 11 inches; loam

Bw--11 to 16 inches; clay loam

C--16 to 60 inches; clay loam

Cc--Comfrey Silty Clay Loam

Component Description

Comfrey and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Flat on flood plain  
Swale on flood plain  
Slope range: 0 to 2 percent  
Surface layer texture: Silty clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Alluvium  
Flooding does not occur (months):  
January February September October November December  
Flooding is most likely (frequency, months):  
Occasional March April May June July August  
Wet soil moisture status is highest (depth, months):  
0.5 foot April  
Wet soil moisture status is lowest (depth, months):  
3.3 feet February August  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.7 inches  
Content of organic matter in the upper 10 inches: 8.0 percent  
Typical profile:  
A1--0 to 14 inches; silty clay loam  
A2--14 to 24 inches; silty clay loam  
Cg--24 to 60 inches; clay loam

#### CdA--Copaston Silt Loam, 0 To 2 Percent Slopes

##### Component Description

###### Copaston and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Bedrock (lithic): 12 to 20 inches  
Drainage class: Well drained  
Parent material:  
Alluvial sediment over bedrock  
Flooding: None  
Depth to wet soil moisture status: More than 2.5 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 3.5 percent  
Typical profile:  
A--0 to 13 inches; silt loam  
AB--13 to 20 inches; silt loam  
Bw--20 to 26 inches; loam  
2R--26 to 36 inches; unweathered bedrock

#### CdB--Copaston Silt Loam, 2 To 6 Percent Slopes

##### Component Description

###### Copaston and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 2 to 6 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:

Bedrock (lithic): 12 to 20 inches  
Drainage class: Well drained  
Parent material:  
Alluvial sediment over bedrock  
Flooding: None  
Depth to wet soil moisture status: More than 2.5 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 3.5 percent  
Typical profile:  
A--0 to 13 inches; silt loam  
AB--13 to 20 inches; silt loam  
Bw--20 to 26 inches; loam  
2R--26 to 36 inches; unweathered bedrock

CdB2--Copaston Silt Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Copaston and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 2 to 6 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Bedrock (lithic): 12 to 20 inches  
Drainage class: Well drained  
Parent material:  
Alluvial sediment over bedrock  
Flooding: None  
Depth to wet soil moisture status: More than 2.5 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 3.5 percent  
Typical profile:  
A--0 to 13 inches; silt loam  
AB--13 to 20 inches; silt loam  
Bw--20 to 26 inches; loam  
2R--26 to 36 inches; unweathered bedrock

DaA--Dakota Loam, 0 To 2 Percent Slopes

Component Description

Dakota and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Moraine  
Outwash plain  
Slope range: 0 to 2 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.8 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 14 inches; loam  
Bt--14 to 24 inches; loam  
2C--24 to 60 inches; gravelly sand

DaB--Dakota Loam, 2 To 6 Percent Slopes

Component Description

Dakota and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine  
Stream terrace  
Outwash plain

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.8 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 14 inches; loam  
Bt--14 to 24 inches; loam  
2C--24 to 60 inches; sand

DaB2--Dakota Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Dakota and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Outwash plain  
Moraine  
Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.8 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 14 inches; loam  
Bt--14 to 24 inches; loam  
2C--24 to 60 inches; sand

DaC2--Dakota Loam, 6 To 12 Percent Slopes, Moderately Eroded

#### Component Description

##### Dakota and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Outwash plain

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.8 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 14 inches; loam

Bt--14 to 24 inches; loam

2C--24 to 60 inches; sand

#### DbA--Dickman Sandy Loam, 0 To 2 Percent Slopes

#### Component Description

##### Dickman and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 12 inches; sandy loam

Bw--12 to 21 inches; sandy loam

2C--21 to 60 inches; sand

#### DbB--Dickman Sandy Loam, 2 To 6 Percent Slopes

#### Component Description

##### Dickman and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.7 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
    Ap--0 to 12 inches; sandy loam  
    Bw--12 to 20 inches; sandy loam  
    2C--20 to 60 inches; sand

DbB2--Dickman Sandy Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Dickman and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 2 to 6 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.5 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
    Ap--0 to 10 inches; sandy loam  
    Bw--10 to 18 inches; sandy loam  
    2C--18 to 60 inches; sand

DbC2--Dickman Sandy Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Dickman and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 6 to 12 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.4 inches  
Content of organic matter in the upper 10 inches: 2.8 percent  
Typical profile:  
    Ap--0 to 9 inches; sandy loam  
    Bw--9 to 16 inches; sandy loam

2C--16 to 60 inches; sand

Dc--Dorchester Loam And Silt Loam

Component Description

Dorchester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Flood plain

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Alluvium

Flooding does not occur (months):

January February July August September October November  
December

Flooding is most likely (frequency, months):

Occasional March April May June

Wet soil moisture status is highest (depth, months):

4.0 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet January February July August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Typical profile:

A1--0 to 30 inches; silt loam

A2--30 to 60 inches; silty clay loam

Dd--Dorchester Silty Clay Loam

Component Description

Dorchester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Flood plain

Slope range: 0 to 2 percent

Surface layer texture: Silty clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Alluvium

Flooding does not occur (months):

January February September October November December

Flooding is most likely (frequency, months):

Occasional March April May June July August

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

4.5 feet February September

Ponding: None

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Typical profile:

A1--0 to 30 inches; silty clay loam



Component Description

Dune land

Extent: 100 percent of the unit  
Geomorphic description:  
Dune on stream terrace  
Drainage class: Excessively drained  
Parent material:  
Eolian sand  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None

EaA--Estherville Loam And Sandy Loam, 0 To 2 Percent Slopes

Component Description

Estherville and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Outwash plain  
Moraine  
Slope range: 0 to 2 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.3 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 12 inches; loam  
Bw--12 to 22 inches; loam  
2C--22 to 60 inches; coarse sand

EaB--Estherville Loam And Sandy Loam, 2 To 6 Percent Slopes

Component Description

Estherville and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Outwash plain  
Moraine  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.0 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 12 inches; loam  
Bw--12 to 20 inches; loam  
2C--20 to 60 inches; coarse sand

EaB2--Estherville Loam And Sandy Loam, 2 To 6 Percent Slopes, Moderately Eroded

#### Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine  
Stream terrace  
Outwash plain

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; loam  
Bw--10 to 18 inches; loam  
2C--18 to 60 inches; coarse sand

EaC--Estherville Loam And Sandy Loam, 6 To 12 Percent Slopes

#### Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine  
Stream terrace  
Outwash plain

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; loam  
Bw--10 to 18 inches; loam  
2C--18 to 60 inches; coarse sand

EaC2--Estherville Loam And Sandy Loam, 6 To 12 Percent Slopes ,moderately Eroded

Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Outwash plain

Stream terrace

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; loam

Bw--10 to 16 inches; loam

2C--16 to 60 inches; coarse sand

EbB--Salida Gravelly Sandy Loam, 0 To 6 Percent Slopes

Component Description

Salida and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Outwash plain

Moraine

Slope range: 0 to 6 percent

Surface layer texture: Gravelly sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.6 inches

Content of organic matter in the upper 10 inches: 0.8 percent

Typical profile:

Ap--0 to 10 inches; gravelly sandy loam

Bw--10 to 20 inches; gravelly loamy coarse sand

C--20 to 60 inches; gravelly coarse sand

EbB2--Salida Gravelly Sandy Loam, 0 To 6 Percent Slopes, Moderately Eroded

Component Description

Salida and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace  
Outwash plain  
Moraine  
Slope range: 0 to 6 percent  
Surface layer texture: Gravelly sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; gravelly sandy loam  
Bw--9 to 18 inches; gravelly loamy coarse sand  
C--18 to 60 inches; very gravelly coarse sand

**EbC--Salida Gravelly Sandy Loam, 6 To 12 Percent Slopes**

**Component Description**

Salida and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Outwash plain  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Gravelly sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; gravelly sandy loam  
Bw--9 to 16 inches; gravelly loamy coarse sand  
C--16 to 60 inches; very gravelly coarse sand

**EbC2--Salida Gravelly Sandy Loam, 6 To 12 Percent Slopes, Moderately Eroded**

**Component Description**

Salida and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
Moraine  
Stream terrace  
Outwash plain  
Slope range: 6 to 12 percent  
Surface layer texture: Gravelly sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; gravelly sandy loam

Bw--9 to 15 inches; gravelly loamy coarse sand

C--15 to 60 inches; very gravelly coarse sand

#### Fa--Faxon Silty Clay Loam, 0 To 2 Percent Slopes

##### Component Description

Faxon and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Flat on stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Silty clay loam

Depth to restrictive feature:

Bedrock (lithic): 20 to 40 inches

Drainage class: Poorly drained

Parent material:

Alluvium over bedrock

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface March April

Wet soil moisture status is lowest (depth, months):

2.3 feet September

Ponding: None

Available water capacity to a depth of 60 inches: 5.9 inches

Content of organic matter in the upper 10 inches: 10.0 percent

Typical profile:

A--0 to 20 inches; silty clay loam

Bg--20 to 29 inches; clay loam

2R--29 to 33 inches; unweathered bedrock

#### Ga--Glencoe Silty Clay Loam

##### Component Description

Glencoe and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Depression on moraine

Slope range: 0 to 1 percent

Surface layer texture: Silty clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface March April

Wet soil moisture status is lowest (depth, months):

2.0 feet February August

Ponding does not occur (months):

January February May June July August September October

November December  
Ponding is deepest (depth, months):  
1.0 foot April  
Available water capacity to a depth of 60 inches: 10.7 inches  
Content of organic matter in the upper 10 inches: 7.5 percent  
Typical profile:  
Ap,A1--0 to 19 inches; silty clay loam  
Bg--19 to 33 inches; clay loam  
Cg--33 to 60 inches; clay loam

HaB--Hayden Loam, 0 To 6 Percent Slopes

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 0 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

HaB2--Hayden Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

#### HaC--Hayden Loam, 6 To 12 Percent Slopes

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

#### HaC2--Hayden Loam, 6 To 12 Percent Slopes, Moderately Eroded

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

#### HaD--Hayden Loam, 12 To 18 Percent Slopes

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

#### HaD2--Hayden Loam, 12 To 18 Percent Slopes, Moderately Eroded

##### Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

#### HaE2--Hayden Loam, 18 To 25 Percent Slopes

##### Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

HaF2--Hayden Loam, 25 To 35 Percent Slopes

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 25 to 35 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
A--0 to 9 inches; loam  
Bt--9 to 45 inches; clay loam  
C--45 to 60 inches; loam

HbB--Hayden Sandy Loam, 0 To 6 Percent Slopes

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 0 to 6 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; sandy loam  
Bt--8 to 32 inches; sandy clay loam  
C--32 to 60 inches; sandy loam

HbB2--Hayden Sandy Loam, 0 To 6 Percent Slopes, Moderately Eroded

Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 0 to 6 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet January February July August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; sandy loam

Bt--8 to 32 inches; sandy clay loam

C--32 to 60 inches; sandy loam

HbC--Hayden Sandy Loam, 6 To 12 Percent Slopes

Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; sandy loam

Bt--8 to 32 inches; sandy clay loam

C--32 to 60 inches; sandy loam

HbC2--Hayden Sandy Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 8 inches; sandy loam  
    Bt--8 to 32 inches; sandy clay loam  
    C--32 to 60 inches; sandy loam

HbD--Hayden Sandy Loam, 12 To 18 Percent Slopes

Component Description

Hayden and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
    Ap--0 to 8 inches; sandy loam  
    Bt--8 to 32 inches; sandy clay loam  
    C--32 to 60 inches; sandy loam

HbD2--Hayden Sandy Loam, 12 To 18 Percent Slopes, Moderately Eroded

Component Description

Hayden and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
    Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; sandy loam  
Bt--8 to 32 inches; sandy clay loam  
C--32 to 60 inches; sandy loam

#### HbD3--Hayden Sandy Clay Loam, 12 To 18 Percent Slopes, Severely Eroded

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 12 to 18 percent

Surface layer texture: Sandy clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; sandy clay loam  
Bt--8 to 24 inches; sandy clay loam  
C--24 to 60 inches; sandy loam

#### HbE2--Hayden Sandy Loam, 18 To 25 Percent Slopes

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 18 to 25 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Typical profile:

Ap--0 to 8 inches; sandy loam  
Bt--8 to 32 inches; sandy clay loam  
C--32 to 60 inches; sandy loam

#### HbE3--Hayden Sandy Clay Loam, 18 To 25 Percent Slopes

##### Component Description

Hayden and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Sandy clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; sandy clay loam  
Bt--8 to 24 inches; sandy clay loam  
C--24 to 60 inches; sandy loam

#### HbF2--Hayden Sandy Loam, 25 To 35 Percent Slopes

##### Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 25 to 35 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
A--0 to 8 inches; sandy loam  
Bt--8 to 32 inches; sandy clay loam  
C--32 to 60 inches; sandy loam

#### HcC3--Hayden Soils, 6 To 12 Percent Slopes, Severely Eroded

##### Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 6 to 12 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; clay loam  
Bt--8 to 24 inches; clay loam  
C--24 to 60 inches; loam

HcD3--Hayden Soils, 12 To 18 Percent Slopes, Severely Eroded

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; clay loam  
Bt--8 to 24 inches; clay loam  
C--24 to 60 inches; loam

HcE3--Hayden Soils, 18 To 25 Percent Slopes

Component Description

Hayden and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 0.7 percent  
Typical profile:  
Ap--0 to 8 inches; clay loam  
Bt--8 to 24 inches; clay loam  
C--24 to 60 inches; loam

HdA--Sparta Fine Sand, 0 To 2 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 12 inches; fine sand

Bw--12 to 38 inches; fine sand

C--38 to 60 inches; fine sand

HdB--Sparta Fine Sand, 2 To 6 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 12 inches; fine sand

Bw--12 to 38 inches; fine sand

C--38 to 60 inches; fine sand

HdB2--Sparta Fine Sand, 2 To 6 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.5 percent  
Typical profile:  
Ap--0 to 12 inches; fine sand  
Bw--12 to 38 inches; fine sand  
C--38 to 60 inches; fine sand

#### HdC--Sparta Fine Sand, 6 To 12 Percent Slopes

##### Component Description

###### Sparta and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 6 to 12 percent  
Surface layer texture: Fine sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.5 percent  
Typical profile:  
Ap--0 to 12 inches; fine sand  
Bw--12 to 38 inches; fine sand  
C--38 to 60 inches; fine sand

#### HdC2--Sparta Fine Sand, 6 To 12 Percent Slopes

##### Component Description

###### Sparta and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 6 to 12 percent  
Surface layer texture: Fine sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.5 percent  
Typical profile:  
Ap--0 to 12 inches; fine sand  
Bw--12 to 38 inches; fine sand  
C--38 to 60 inches; fine sand

#### HeA--Sparta Loamy Fine Sand, 0 To 2 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Loamy fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

A--0 to 10 inches; loamy fine sand

Bw--10 to 38 inches; fine sand

C--38 to 60 inches; fine sand

HeB--Sparta Loamy Fine Sand, 2 To 6 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Loamy fine sand, loamy fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 10 inches; loamy fine sand, loamy fine sand

Bw--10 to 38 inches; fine sand, fine sand

C--38 to 60 inches; fine sand, fine sand

HeB2--Sparta Loamy Fine Sand, 2 To 6 Percent Slopes

Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Loamy fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 10 inches; loamy fine sand

Bw--10 to 38 inches; fine sand

C--38 to 60 inches; fine sand

#### HeC--Sparta Loamy Fine Sand, 6 To 12 Percent Slopes

##### Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 6 to 12 percent

Surface layer texture: Loamy fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 10 inches; loamy fine sand

Bw--10 to 38 inches; fine sand

C--38 to 60 inches; fine sand

#### HeC2--Sparta Loamy Fine Sand, 6 To 12 Percent Slopes

##### Component Description

Sparta and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 6 to 12 percent

Surface layer texture: Loamy fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Typical profile:

Ap--0 to 10 inches; loamy fine sand

Bw--10 to 38 inches; fine sand

C--38 to 60 inches; fine sand

Ia--Isanti Fine Sandy Loam

Component Description

Isanti and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Swale on stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Outwash

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

2.0 feet August

Ponding: None

Available water capacity to a depth of 60 inches: 6.2 inches

Content of organic matter in the upper 10 inches: 9.0 percent

Typical profile:

Ap,A--0 to 26 inches; fine sandy loam

Bg--26 to 31 inches; loamy fine sand

Cg--31 to 60 inches; fine sand

KaA--Kasota Silt Loam, 0 To 2 Percent Slopes

Component Description

Kasota and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Glaciolacustrine sediments over outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Typical profile:

Ap--0 to 14 inches; silt loam

Bt--14 to 27 inches; clay loam

2C--27 to 60 inches; gravelly sand

KaB--Kasota Silt Loam, 2 To 6 Percent Slopes

Component Description

Kasota and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Glaciolacustrine sediments over outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.3 inches  
Content of organic matter in the upper 10 inches: 4.5 percent  
Typical profile:  
Ap--0 to 14 inches; silt loam  
Bt--14 to 27 inches; clay loam  
2C--27 to 60 inches; gravelly sand

#### LaA--Wadena Loam, 0 To 2 Percent Slopes

##### Component Description

###### Wadena and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Outwash plain  
Moraine  
Slope range: 0 to 2 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.0 inches  
Content of organic matter in the upper 10 inches: 4.5 percent  
Typical profile:  
Ap,A--0 to 16 inches; loam  
Bw--16 to 25 inches; loam  
2C--25 to 60 inches; stratified gravelly coarse sand to sand

#### LaB--Estherville Loam, 2 To 6 Percent Slopes

##### Component Description

###### Estherville and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None

Available water capacity to a depth of 60 inches: 5.0 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 12 inches; loam  
Bw--12 to 20 inches; loam  
2C--20 to 60 inches; gravelly coarse sand

LaB2--Estherville Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Estherville and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 2 to 6 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 10 inches; loam  
Bw--10 to 18 inches; loam  
2C--18 to 60 inches; gravelly coarse sand

LaC--Estherville Loam, 6 To 12 Percent Slopes

Component Description

Estherville and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 6 to 12 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 10 inches; loam  
Bw--10 to 18 inches; loam  
2C--18 to 60 inches; gravelly coarse sand

LaC2--Estherville Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; loam

Bw--10 to 16 inches; loam

2C--16 to 60 inches; gravelly coarse sand

1aD--Estherville Loam, 12 To 18 Percent Slopes

Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 12 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; loam

Bw--10 to 16 inches; loam

2C--16 to 60 inches; gravelly coarse sand

1aD2--Estherville Loam, 12 To 18 Percent Slopes, Moderately Eroded

Component Description

Estherville and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 12 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.0 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 8 inches; loam  
Bw--8 to 14 inches; loam  
2C--14 to 60 inches; gravelly coarse sand

LbB--Estherville-Burnsville Complex, 2 To 6 Percent Slopes

Component Description

Estherville and similar soils

Extent: 60 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 2 to 6 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.1 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 10 inches; sandy loam  
Bw--10 to 18 inches; sandy loam  
2C--18 to 60 inches; gravelly coarse sand

Burnsville and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 2 to 6 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.9 inches  
Content of organic matter in the upper 10 inches: 0.6 percent  
Typical profile:  
Ap--0 to 5 inches; sandy loam  
Bt--5 to 21 inches; sandy loam  
2C--21 to 60 inches; gravelly coarse sand

LbB2--Estherville-Burnsville Complex, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Estherville and similar soils

Extent: 60 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 2 to 6 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.1 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; sandy loam

Bw--10 to 18 inches; sandy loam

2C--18 to 60 inches; gravelly coarse sand

Burnsville and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 2 to 6 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.9 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Typical profile:

Ap--0 to 5 inches; sandy loam

Bt--5 to 21 inches; sandy loam

2C--21 to 60 inches; gravelly coarse sand

LbC--Estherville-Burnsville Complex, 6 To 12 Percent Slopes

Component Description

Estherville and similar soils

Extent: 60 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 6 to 12 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.1 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; sandy loam

Bw--10 to 18 inches; sandy loam

2C--18 to 60 inches; gravelly coarse sand

Burnsville and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 6 to 12 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.9 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Typical profile:

Ap--0 to 5 inches; sandy loam

Bt--5 to 21 inches; sandy loam

2C--21 to 60 inches; gravelly coarse sand

LbC2--Estherville-Burnsville Complex, 6 To 12 Percent Slopes, Moderately Eroded

#### Component Description

Estherville and similar soils

Extent: 60 percent of the unit

Geomorphic description:

Moraine

Outwash plain

Slope range: 6 to 12 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.1 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Typical profile:

Ap--0 to 10 inches; sandy loam

Bw--10 to 18 inches; sandy loam

2C--18 to 60 inches; gravelly coarse sand

Burnsville and similar soils

Extent: 40 percent of the unit

Geomorphic description:

Moraine  
Outwash plain  
Slope range: 6 to 12 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.9 inches  
Content of organic matter in the upper 10 inches: 0.6 percent  
Typical profile:  
Ap--0 to 5 inches; sandy loam  
Bt--5 to 21 inches; sandy loam  
2C--21 to 60 inches; gravelly coarse sand

LbD--Estherville-Burnsville Complex, 12 To 50 Percent Slopes

Component Description

Estherville and similar soils

Extent: 60 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 12 to 50 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.1 inches  
Content of organic matter in the upper 10 inches: 3.0 percent  
Typical profile:  
Ap--0 to 10 inches; sandy loam  
Bw--10 to 18 inches; sandy loam  
2C--18 to 60 inches; gravelly coarse sand

Burnsville and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Outwash plain  
Slope range: 12 to 50 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.9 inches  
Content of organic matter in the upper 10 inches: 0.6 percent

Typical profile:

Ap--0 to 5 inches; sandy loam  
Bt--5 to 21 inches; sandy loam  
2C--21 to 60 inches; gravelly coarse sand

LcB--Lester Loam, 2 To 6 Percent Slopes

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet January February July August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; loam  
Bt--9 to 38 inches; clay loam  
C--38 to 60 inches; loam

LcB2--Lester Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet January February July August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; loam  
Bt--9 to 38 inches; clay loam  
C--38 to 60 inches; loam

LcC--Lester Loam, 6 To 12 Percent Slopes

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 38 inches; clay loam

C--38 to 60 inches; loam

LcC2--Lester Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 38 inches; clay loam

C--38 to 60 inches; loam

LcD--Lester Loam, 12 To 18 Percent Slopes

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 12 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 38 inches; clay loam  
C--38 to 60 inches; loam

LcD2--Lester Loam, 12 To 18 Percent Slopes, Moderately Eroded

Component Description

Lester and similar soils  
Extent: 85 percent of the unit  
Geomorphie description:  
Moraine  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; loam  
Bt--9 to 38 inches; clay loam  
C--38 to 60 inches; loam

LcE2--Lester Loam, 18 To 25 Percent Slopes

Component Description

Lester and similar soils  
Extent: 85 percent of the unit  
Geomorphie description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; loam

Bt--9 to 38 inches; clay loam  
C--38 to 60 inches; loam

LcF2--Lester Loam, 25 To 35 Percent Slopes

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 25 to 35 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; loam

Bt--9 to 38 inches; clay loam

C--38 to 60 inches; loam

LdC3--Lester Soils, 6 To 12 Percent Slopes, Severely Eroded

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 6 to 12 percent

Surface layer texture: Clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; clay loam

Bt--9 to 26 inches; clay loam

C--26 to 60 inches; loam

LdD3--Lester Soils, 12 To 18 Percent Slopes, Severely Eroded

Component Description

Lester and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 12 to 18 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.3 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; clay loam  
Bt--9 to 26 inches; clay loam  
C--26 to 60 inches; loam

#### LdE3--Lester Soils, 18 To 25 Percent Slopes

##### Component Description

###### Lester and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 18 to 25 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.3 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; clay loam  
Bt--9 to 26 inches; clay loam  
C--26 to 60 inches; loam

#### LdF3--Lester Soils, 25 To 35 Percent Slopes

##### Component Description

###### Lester and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 25 to 35 percent  
Surface layer texture: Clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.3 inches  
Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

Ap--0 to 9 inches; clay loam  
Bt--9 to 26 inches; clay loam  
C--26 to 60 inches; loam

Le--Le Sueur Loam

Component Description

Le sueur and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Slope range: 1 to 3 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet February August

Ponding: None

Available water capacity to a depth of 60 inches: 11.0 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Typical profile:

Ap--0 to 17 inches; loam

Bt--17 to 35 inches; clay loam

C--35 to 60 inches; loam

Lf--Le Sueur-Lester Complex

Component Description

Le sueur and similar soils

Extent: 60 percent of the unit

Geomorphic description:

Moraine

Slope range: 1 to 3 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 5.0 feet February August

Ponding: None

Available water capacity to a depth of 60 inches: 10.8 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Typical profile:

Ap--0 to 13 inches; loam

Bt--13 to 50 inches; clay loam

C--50 to 60 inches; loam

Lester and similar soils

Extent: 40 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 2 to 5 percent  
Surface layer texture: Loam, loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet January February July August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.5 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
Ap--0 to 9 inches; loam, loam  
Bt--9 to 38 inches; clay loam, clay loam  
C--38 to 60 inches; loam

#### Ma--Marsh

##### Component Description

###### Marsh and similar soils

Extent: 100 percent of the unit  
Geomorphic description:  
Depression  
Slope range: 0 to 1 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material  
Flooding: None  
Wet soil moisture status: At the surface all year  
Ponding is shallowest (depth, months):  
0.5 foot August  
Ponding is deepest (depth, months):  
3.0 feet March April May  
Available water capacity to a depth of 60 inches: 23.9 inches  
Content of organic matter in the upper 10 inches: 84.5 percent  
Typical profile:  
Oa1--0 to 9 inches; muck  
Oa2--9 to 60 inches; muck

#### Oa--Oshawa Silty Clay Loam

##### Component Description

###### Oshawa and similar soils

Extent: 85 percent of the unit  
Geomorphic description:  
Oxbow on flood plain  
Swale on flood plain  
Slope range: 0 to 1 percent  
Surface layer texture: Silty clay loam

Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Alluvium  
Flooding does not occur (months):  
January February September October November December  
Flooding is most likely (frequency, months):  
Frequent March April May June  
Wet soil moisture status is highest (depth, months):  
At the surface February March April May June  
July November December  
Wet soil moisture status is lowest (depth, months):  
1.0 foot January September  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
2.0 feet May June  
Available water capacity to a depth of 60 inches: 11.2 inches  
Content of organic matter in the upper 10 inches: 7.0 percent  
Typical profile:  
A--0 to 20 inches; silty clay loam  
Cg--20 to 60 inches; silty clay loam

PaA--Palms Muck, 0 To 2 Percent Slopes

Component Description

Palms and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Depression on moraine  
Slope range: 0 to 2 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material over loamy sediments  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface March April  
Wet soil moisture status is lowest (depth, months):  
2.0 feet February August  
Ponding does not occur (months):  
January February May June July August September October  
November December  
Ponding is deepest (depth, months):  
1.0 foot April  
Available water capacity to a depth of 60 inches: 16.1 inches  
Content of organic matter in the upper 10 inches: 87.0 percent  
Typical profile:  
Oa--0 to 24 inches; muck  
Cg--24 to 60 inches; clay loam

PaB--Palms Muck, Sloping, 2 To 12 Percent Slopes

Component Description

Palms, sloping and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:

Moraine  
Position on landform:  
Toeslope  
Slope range: 2 to 12 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material over loamy sediments  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface March April  
Wet soil moisture status is lowest (depth, months):  
2.0 feet September  
Ponding: None  
Available water capacity to a depth of 60 inches: 16.1 inches  
Content of organic matter in the upper 10 inches: 87.0 percent  
Typical profile:  
Oa--0 to 24 inches; muck  
Cg--24 to 60 inches; clay loam

PbA--Houghton Muck, 0 To 2 Percent Slopes

Component Description

Houghton and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Depression on moraine  
Slope range: 0 to 2 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface March April  
Wet soil moisture status is lowest (depth, months):  
2.0 feet February August  
Ponding does not occur (months):  
January February May June July August September October  
November December  
Ponding is deepest (depth, months):  
1.0 foot April  
Available water capacity to a depth of 60 inches: 23.9 inches  
Content of organic matter in the upper 10 inches: 84.5 percent  
Typical profile:  
Oa1--0 to 10 inches; muck  
Oa2--10 to 60 inches; muck

PbB--Houghton Muck, Sloping, 2 To 6 Percent Slopes

Component Description

Houghton, sloping and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:

Toeslope  
Slope range: 2 to 6 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
    Organic material  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                      March April  
Wet soil moisture status is lowest (depth, months):  
    2.0 feet                              September  
Ponding: None  
Available water capacity to a depth of 60 inches: 23.9 inches  
Content of organic matter in the upper 10 inches: 84.5 percent  
Typical profile:  
    Oa1--0 to 10 inches; muck  
    Oa2--10 to 60 inches; muck

#### Ra--Oshawa Silty Clay Loam

##### Component Description

Oshawa and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
    Swale on flood plain  
    Oxbow on flood plain  
Slope range: 0 to 1 percent  
Surface layer texture: Silty clay loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
    Alluvium  
Flooding does not occur (months):  
    January February September October November December  
Flooding is most likely (frequency, months):  
    Frequent                              March April May June  
Wet soil moisture status is highest (depth, months):  
    At the surface                      April May June  
Wet soil moisture status is lowest (depth, months):  
    1.8 feet                              February  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.2 inches  
Content of organic matter in the upper 10 inches: 7.0 percent  
Typical profile:  
    A--0 to 20 inches; silty clay loam  
    Cg--20 to 60 inches; silty clay loam

#### Sa--Sandstone Outcrops

##### Component Description

Sandstone outcrops  
Extent: 100 percent of the unit  
Geomorphic description:  
    Terrace  
Parent material:  
    Residuum  
Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None

**Sb--Steep Land, Hayden-Lester Materials**

**Component Description**

**Steep land**

Extent: 100 percent of the unit

Geomorphic description:

Escarpment

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

**Sc--Stony Land**

**Component Description**

**Stony land**

Extent: 100 percent of the unit

Geomorphic description:

Terrace

Parent material:

Till

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

**Ta--Terrace Escarpments**

**Component Description**

**Terrace escarpments**

Extent: 100 percent of the unit

Geomorphic description:

Terrace

Parent material:

Variable glacial sediments

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

**TbB--Terril Loam, 2 To 6 Percent Slopes**

**Component Description**

**Terril and similar soils**

Extent: 85 percent of the unit

Geomorphic description:

Stream terrace

Moraine

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Colluvium over till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February July August  
September  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.8 inches  
Content of organic matter in the upper 10 inches: 4.0 percent  
Typical profile:  
Ap,A1--0 to 39 inches; loam  
Bw--39 to 47 inches; loam  
C--47 to 60 inches; loam

TbC--Terril Loam, 6 To 12 Percent Slopes

Component Description

Terril and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Stream terrace  
Slope range: 6 to 12 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Colluvium over till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February July August  
September  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.8 inches  
Content of organic matter in the upper 10 inches: 4.0 percent  
Typical profile:  
Ap,A1--0 to 39 inches; loam  
Bw--39 to 47 inches; loam  
C--47 to 60 inches; loam

TbD--Terril Loam, 12 To 18 Percent Slopes

Component Description

Terril and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Stream terrace  
Slope range: 12 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Colluvium over till  
Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.8 inches  
Content of organic matter in the upper 10 inches: 4.0 percent  
Typical profile:  
Ap,A1--0 to 39 inches; loam  
Bw--39 to 47 inches; loam  
C--47 to 60 inches; loam

TbE--Terril Loam, 18 To 25 Percent Slopes

Component Description

Terril and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Stream terrace  
Slope range: 18 to 25 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Colluvium over till  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.8 inches  
Content of organic matter in the upper 10 inches: 4.0 percent  
Typical profile:  
A1,A2--0 to 39 inches; loam  
Bw--39 to 47 inches; loam  
C--47 to 60 inches; loam

TcA--Terril Loam, 0 To 2 Percent Slopes

Component Description

Terril and similar soils  
Extent: 85 percent of the unit  
Geomorphic description:  
Moraine  
Stream terrace  
Slope range: 0 to 2 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Colluvium over till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.6 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February July August  
September  
Ponding: None  
Available water capacity to a depth of 60 inches: 11.8 inches  
Content of organic matter in the upper 10 inches: 4.0 percent  
Typical profile:  
Ap,A1--0 to 39 inches; loam

Bw--39 to 47 inches; loam  
C--47 to 60 inches; loam

TcB--Terril Loam, 2 To 6 Percent Slopes

Component Description

Terril and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Colluvium over till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February July August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Typical profile:

Ap,A1--0 to 39 inches; loam

Bw--39 to 47 inches; loam

C--47 to 60 inches; loam

TcC--Terril Loam, 6 To 12 Percent Slopes

Component Description

Terril and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Stream terrace

Slope range: 6 to 12 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Colluvium over till

Flooding: None

Wet soil moisture status is highest (depth, months):

3.6 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February July August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Typical profile:

Ap,A1--0 to 39 inches; loam

Bw--39 to 47 inches; loam

C--47 to 60 inches; loam

TcD--Terril Loam, 12 To 18 Percent Slopes

Component Description

Terril and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Stream terrace

Slope range: 12 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Colluvium over till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Typical profile:

Ap,A1--0 to 39 inches; loam

Bw--39 to 47 inches; loam

C--47 to 60 inches; loam

TcE--Terril Loam, 18 To 25 Percent Slopes

Component Description

Terril and similar soils

Extent: 85 percent of the unit

Geomorphic description:

Moraine

Stream terrace

Slope range: 18 to 25 percent

Surface layer texture: Loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Colluvium over till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Typical profile:

A1,A2--0 to 39 inches; loam

Bw--39 to 47 inches; loam

C--47 to 60 inches; loam

W--Water

Component Description

Water

Extent: 100 percent of the unit

WaA--Waukegan Silt Loam, 0 To 2 Percent Slopes

Component Description

Waukegan and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 7.6 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 11 inches; silt loam

Bw--11 to 31 inches; silt loam

2C--31 to 60 inches; gravelly sand

WaB--Waukegan Silt Loam, 2 To 6 Percent Slopes

Component Description

Waukegan and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 7.6 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Typical profile:

Ap--0 to 11 inches; silt loam

Bw--11 to 31 inches; silt loam

2C--31 to 60 inches; gravelly sand

WaB2--Waukegan Silt Loam, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Waukegan and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.8 inches  
Content of organic matter in the upper 10 inches: 3.3 percent  
Typical profile:  
    Ap--0 to 9 inches; silt loam  
    Bw--9 to 27 inches; silt loam  
    2C--27 to 60 inches; gravelly sand

WaC2--Waukegan Silt Loam, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Waukegan and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 6 to 12 percent  
Surface layer texture: Silt loam, silt loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.5 inches  
Content of organic matter in the upper 10 inches: 3.3 percent  
Typical profile:  
    Ap--0 to 9 inches; silt loam, silt loam  
    Bw--9 to 25 inches; silt loam  
    2C--25 to 60 inches; gravelly sand

WaD2--Waukegan Silt Loam, 12 To 18 Percent Slopes, Moderately Eroded

Component Description

Waukegan and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 12 to 18 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.3 inches  
Content of organic matter in the upper 10 inches: 3.3 percent  
Typical profile:  
    Ap--0 to 9 inches; silt loam  
    Bw--9 to 24 inches; silt loam  
    2C--24 to 60 inches; gravelly sand

Wb--Webster-Glencoe Silty Clay Loams

Component Description

Webster and similar soils

Extent: 70 percent of the unit

Geomorphic description:

Swale on moraine

Slope range: 0 to 2 percent

Surface layer texture: Silty clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

3.3 feet February August

Ponding: None

Available water capacity to a depth of 60 inches: 10.6 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Typical profile:

Ap,A1--0 to 15 inches; silty clay loam

Bg--15 to 30 inches; clay loam

Cg--30 to 60 inches; loam

Glencoe and similar soils

Extent: 30 percent of the unit

Geomorphic description:

Depression on moraine

Slope range: 0 to 1 percent

Surface layer texture: Silty clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface March April

Wet soil moisture status is lowest (depth, months):

2.0 feet February August

Ponding does not occur (months):

January February May June July August September October  
November December

Ponding is deepest (depth, months):

1.0 foot April

Available water capacity to a depth of 60 inches: 10.7 inches

Content of organic matter in the upper 10 inches: 7.5 percent

Typical profile:

Ap,A1--0 to 19 inches; silty clay loam

Bg--19 to 33 inches; clay loam

Cg--33 to 60 inches; clay loam

Wc--Webster-Le Sueur Silty Clay Loams

Component Description

Webster and similar soils

Extent: 70 percent of the unit  
Geomorphic description:  
Swale on moraine  
Slope range: 0 to 2 percent  
Surface layer texture: Silty clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April  
Wet soil moisture status is lowest (depth, months):  
3.3 feet February August  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.6 inches  
Content of organic matter in the upper 10 inches: 5.5 percent  
Typical profile:  
Ap,A1--0 to 15 inches; silty clay loam  
Bg--15 to 30 inches; clay loam  
Cg--30 to 60 inches; loam

Le sueur and similar soils

Extent: 30 percent of the unit  
Geomorphic description:  
Moraine  
Slope range: 1 to 3 percent  
Surface layer texture: Silty clay loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 5.0 feet February August  
Ponding: None  
Available water capacity to a depth of 60 inches: 10.4 inches  
Content of organic matter in the upper 10 inches: 5.0 percent  
Typical profile:  
Ap--0 to 13 inches; silty clay loam  
Bt--13 to 50 inches; clay loam  
C--50 to 60 inches; loam

ZaA--Sartell Fine Sand, 0 To 2 Percent Slopes

Component Description

Sartell and similar soils

Extent: 90 percent of the unit  
Geomorphic description:  
Stream terrace  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Outwash  
Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 1.2 percent  
Typical profile:  
    Ap--0 to 10 inches; fine sand  
    Bw--10 to 26 inches; sand  
    C--26 to 60 inches; sand

ZaA2--Sartell Fine Sand, 0 To 2 Percent Slopes, Moderately Eroded

Component Description

Sartell and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sand  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 1.2 percent  
Typical profile:  
    Ap--0 to 10 inches; fine sand  
    Bw--10 to 26 inches; sand  
    C--26 to 60 inches; sand

ZaB--Sartell Fine Sand, 2 To 6 Percent Slopes

Component Description

Sartell and similar soils  
Extent: 90 percent of the unit  
Geomorphic description:  
    Stream terrace  
Slope range: 2 to 6 percent  
Surface layer texture: Fine sand  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
    Outwash  
Flooding: None  
Depth to wet soil moisture status: More than 5.0 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.6 inches  
Content of organic matter in the upper 10 inches: 1.2 percent  
Typical profile:  
    Ap--0 to 10 inches; fine sand  
    Bw--10 to 26 inches; sand  
    C--26 to 60 inches; sand

ZaB2--Sartell Fine Sand, 2 To 6 Percent Slopes, Moderately Eroded

Component Description

Sartell and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 2 to 6 percent

Surface layer texture: Fine sand, fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Typical profile:

Ap--0 to 10 inches; fine sand, fine sand

Bw--10 to 26 inches; sand

C--26 to 60 inches; sand

ZaC2--Sartell Fine Sand, 6 To 12 Percent Slopes, Moderately Eroded

Component Description

Sartell and similar soils

Extent: 90 percent of the unit

Geomorphic description:

Stream terrace

Slope range: 6 to 12 percent

Surface layer texture: Fine sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Outwash

Flooding: None

Depth to wet soil moisture status: More than 5.0 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Typical profile:

Ap--0 to 10 inches; fine sand

Bw--10 to 26 inches; sand

C--26 to 60 inches; sand