

015CS—Clime-Sogn complex, 3 to 15 percent slopes

Map Unit Composition

Clime: 60 percent
Sogn: 20 percent
Minor components: 20 percent

Component Descriptions

Clime

MLRA: 76 - Bluestem Hills, 76 - Bluestem Hills
Landform: Ridge on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from calcareous shale
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.4 inches)
Shrink-swell potential: High (About 7.7 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Limy Upland (pe30-36)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 11 inches; silty clay
H2—11 to 23 inches; silty clay
H3—23 to 33 inches; silty clay
Cr—33 to 37 inches; unweathered bedrock

Sogn

MLRA: 76 - Bluestem Hills, 76 - Bluestem Hills
Landform: Ridge on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from limestone
Slope: 5 to 20 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 1.4 inches)
Shrink-swell potential: Moderate (About 4.2 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium

Ecological site: Shallow Limy (pe30-36)
Land capability (nonirrigated): 7s

Typical Profile:

H1—0 to 7 inches; silty clay loam
R—7 to 11 inches; unweathered bedrock

Minor Components

Dwight

Composition: About 5 percent
Geomorphic Position: divide on hillslope on upland
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

Labette

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe30-36)

Rock outcrop

Composition: About 5 percent

Martin

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe30-36)

015LD—Labette-Dwight complex, 1 to 3 percent slopes

Map Unit Composition

Labette: 50 percent
Dwight: 40 percent
Minor components: 10 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone-shale
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 6.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 13 inches; silty clay loam
 H2—13 to 38 inches; silty clay
 R—38 to 42 inches; unweathered bedrock

Dwight

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone, cherty
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 4.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Pan (pe30-36)

Typical Profile:

H1—0 to 5 inches; silt loam
 H2—5 to 33 inches; silty clay
 R—33 to 37 inches; unweathered bedrock

Minor Components

Irwin

Composition: About 5 percent
Geomorphic Position: hillside on upland
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe25-34)

Ladysmith

Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe25-34)

017IN—Irwin silty clay loam, 1 to 3 percent slopes, eroded

Map Unit Composition

Irwin: 95 percent
 Minor components: 5 percent

Component Descriptions

Irwin

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from clayey shale
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 4 inches; silty clay loam
 H2—4 to 53 inches; silty clay
 H3—53 to 60 inches; silty clay

Minor Components

Dwight

Composition: About 5 percent
Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

031ER—Eram-Collinsville complex, 4 to 15 percent slopes

Map Unit Composition

Eram: 65 percent
 Collinsville: 20 percent
 Minor components: 15 percent

Component Descriptions

Eram*MLRA:* 112 - Cherokee Prairies*Landform:* Hillslope on upland*Hillslope position:* Summit, backslope*Parent material:* Silty and clayey residuum weathered from shale, unspecified*Slope:* 5 to 12 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)*Drainage class:* Moderately well drained*Slowest permeability:* Slow (About 0.06 in/hr)*Available water capacity:* Low (About 4.3 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* About 6 to 18 inches*Runoff class:* Very high*Ecological site:* Clay Upland (pe35-42)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 10 inches; silt loam

H2—10 to 28 inches; silty clay

Cr—28 to 32 inches; weathered bedrock

Collinsville*MLRA:* 112 - Cherokee Prairies*Landform:* Hillslope on upland*Hillslope position:* Summit, shoulder*Parent material:* Loamy residuum weathered from sandstone*Slope:* 4 to 15 percent*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)*Drainage class:* Well drained*Slowest permeability:* Moderately rapid (About 2.00 in/hr)*Available water capacity:* Very low (About 2.4 inches)*Shrink-swell potential:* Low (About 1.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Low*Ecological site:* Shallow Sandstone (pe35-42)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 14 inches; loam

R—14 to 18 inches; unweathered bedrock

Minor Components**Summit***Composition:* About 5 percent*Geomorphic Position:* hillslope on upland*Slope:* 1 to 3 percent*Drainage class:* Moderately well drained*Ecological site:* Loamy Upland (pe35-42)**Apperson***Composition:* About 5 percent*Slope:* 1 to 4 percent*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)*Drainage class:* Moderately well drained*Ecological site:* Loamy Upland (pe35-42)**Bates***Composition:* About 5 percent*Slope:* 4 to 7 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe35-42)**031ES—Eram-Shidler silty clay loams, 4 to 15 percent slopes****Map Unit Composition**

Eram: 60 percent

Shidler: 25 percent

Minor components: 15 percent

Component Descriptions**Eram***MLRA:* 112 - Cherokee Prairies*Landform:* Hillslope on upland*Hillslope position:* Summit, backslope*Parent material:* Silty and clayey residuum weathered from shale, unspecified*Slope:* 4 to 15 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)*Drainage class:* Moderately well drained*Slowest permeability:* Slow (About 0.06 in/hr)*Available water capacity:* Low (About 4.0 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* About 6 to 18 inches*Runoff class:* Very high*Ecological site:* Clay Upland (pe35-42)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 8 inches; silty clay loam

H2—8 to 26 inches; silty clay

Cr—26 to 30 inches; weathered bedrock

Shidler*MLRA:* 112 - Cherokee Prairies*Landform:* Rim on upland

Parent material: Residuum weathered from limestone
Slope: 4 to 15 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 2.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe35-42)
Land capability (nonirrigated): 7s

Typical Profile:

H1—0 to 12 inches; silty clay loam
 R—12 to 16 inches; unweathered bedrock

Minor Components

Olpe

Composition: About 15 percent
Slope: 4 to 15 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

031SA—Summit silty clay loam, 1 to 4 percent slopes

Mapunit Information: This soil was formerly mapped as Martin in Douglas and Johnson counties.

Map Unit Composition

Summit: 85 percent
 Minor components: 15 percent

Component Descriptions

Summit

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Footslope, backslope
Parent material: Silty and clayey residuum weathered from acid shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None
Depth to seasonal water saturation: About 24 to 36 inches
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 9 inches; silty clay loam
 Bt1—9 to 17 inches; silty clay
 Bt2—17 to 24 inches; silty clay
 Bt3—24 to 41 inches; silty clay
 Bt4—41 to 61 inches; silty clay
 Bt5—61 to 73 inches; silty clay

Component note: The Summit series was formerly mapped as Martin in Douglas and Johnson County Soil Surveys. The Summit soils are very deep and have slow permeability. Shrink-swell potential is high. In some areas the soil is 40 to 60 inches to shale bedrock. In some places have dark surface soil is less than 7 inches thick. Also, included are some areas that have slopes from 5 to 8 percent.

Minor Components

Kenoma

Composition: About 10 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Wagstaff

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

General Considerations: Most areas of this soil are cultivated. It is well suited to all crops commonly grown in the watershed. Erosion is a serious hazard that can be controlled by terraces, contour farming, or conservation tillage. This soil has good potential for hay, tame grasses, and trees. The wetness limits the suitability of this soil for many engineering uses. The land capability classification is 1le.

**031VC—Verdigris silt loam,
channeled**

Slope: 20 to 40 percent
Depth to restrictive feature: 0 inches to
 bedrock (lithic)

Map Unit Composition

Verdigris: 88 percent
 Minor components: 12 percent

Component Descriptions**Verdigris**

MLRA: 112 - Cherokee Prairies
Landform: Flood plain on valley
Parent material: Silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60
 in/hr)
Available water capacity: High (About 12.0
 inches)
Shrink-swell potential: Moderate (About 4.5
 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6
 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 5w

Typical Profile:

A—0 to 7 inches; silt loam
 Bw—7 to 60 inches; silt loam

Minor Components**Bates**

Composition: About 3 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches
 to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Eram

Composition: About 3 percent
Geomorphic Position: hillside on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches
 to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Osage

Composition: About 3 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

Rock outcrop

Composition: About 3 percent

**049FM—Florence-Martin complex,
2 to 12 percent slopes****Map Unit Composition**

Florence: 60 percent
 Martin: 30 percent
 Minor components: 10 percent

Component Descriptions**Florence**

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Limestone, cherty
Slope: 2 to 12 percent
Depth to restrictive feature: 40 to 60 inches to
 bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately slow (About
 0.20 in/hr)
Available water capacity: Low (About 4.2 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6
 feet
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 6 inches; gravelly silt loam
 H2—6 to 12 inches; gravelly silt loam
 H3—12 to 32 inches; extremely gravelly silty
 clay
 H4—32 to 49 inches; extremely cobbly clay
 R—49 to 53 inches; unweathered bedrock

Martin

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey colluvium
 derived from limestone and shale over silty
 and
 clayey residuum weathered from limestone and
 shale
Slope: 2 to 11 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 60 inches; silty clay

Minor Components

Clime

Composition: About 5 percent
Geomorphic Position: hillside on upland
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Limy Upland (pe30-36)

Dwight

Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

049ST—Steedman stony loam, 5 to 20 percent slopes

Map Unit Composition

Steedman: 85 percent
 Minor components: 15 percent

Component Descriptions

Steedman

MLRA: 84A - Cross Timbers
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Clayey residuum weathered from clayey shale
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: About 12 to 24 inches
Runoff class: Very high
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 7 inches; stony loam
 H2—7 to 36 inches; silty clay
 Cr—36 to 40 inches; weathered bedrock

Minor Components

Rock outcrop

Composition: About 5 percent
Geomorphic Position: hillslope on upland

Collinsville

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 8 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Sandstone (pe35-38)

Bates

Composition: About 5 percent
Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

111BC—Bates-Collinsville complex, 3 to 15 percent slopes

Map Unit Composition

Bates: 65 percent
 Collinsville: 35 percent

Component Descriptions

Bates

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Sandy and silty residuum weathered from sandstone, unspecified over sandy and silty residuum weathered from sandstone-shale
Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 17 inches; loam
 H2—17 to 31 inches; clay loam
 H3—31 to 35 inches; gravelly sandy clay loam
 Cr—35 to 59 inches; unweathered bedrock

Collinsville

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Loamy residuum weathered from sandstone
Slope: 3 to 15 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 1.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Sandstone (pe35-42)
Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 7 inches; fine sandy loam
 H2—7 to 11 inches; gravelly fine sandy loam
 R—11 to 11 inches; unweathered bedrock

111EE—Eram silty clay loam, 3 to 6 percent slopes, eroded

Map Unit Composition

Eram: 100 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 3 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 6 inches; silty clay loam
 H2—6 to 25 inches; silty clay
 Cr—25 to 59 inches; weathered bedrock

111EF—Eram And Bates Soils, 6 to 15 percent slopes

Map Unit Composition

Eram: 60 percent
 Bates: 40 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.1 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 7 inches; silt loam
 H2—7 to 27 inches; silty clay
 Cr—27 to 59 inches; weathered bedrock

Bates

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Parent material: Sandy and silty residuum
 weathered from sandstone, unspecified over
 sandy and

silty residuum weathered from sandstone-shale

Slope: 6 to 8 percent

Depth to restrictive feature: 20 to 40 inches to
 bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60
 in/hr)

Available water capacity: Moderate (About 6.2
 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6
 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe35-42)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 7 inches; loam
 H2—7 to 31 inches; clay loam
 H3—31 to 35 inches; gravelly sandy clay
 loam
 H4—35 to 35 inches; unweathered bedrock

111LD—Labette-Dwight complex, 0 to 2 percent slopes

Map Unit Composition

Labette: 60 percent

Dwight: 40 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills

Landform: Hillslope on upland

Parent material: Silty and clayey residuum
 weathered from limestone-shale

Slope: 1 to 2 percent

Depth to restrictive feature: 20 to 40 inches to
 bedrock (lithic)

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Moderate (About 6.4
 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6
 feet

Runoff class: High

Ecological site: Loamy Upland (pe30-36)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 8 inches; silty clay loam
 H2—8 to 38 inches; silty clay
 R—38 to 38 inches; unweathered bedrock

Dwight

MLRA: 76 - Bluestem Hills

Landform: Divide on upland, hillslope on upland

Parent material: Silty and clayey residuum
 weathered from limestone, cherty

Slope: 0 to 2 percent

Depth to restrictive feature: 40 to 60 inches to
 bedrock (lithic)

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00
 in/hr)

Available water capacity: Moderate (About 6.6
 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6
 feet

Runoff class: Very high

Ecological site: Clay Pan (pe25-34)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 4 inches; silt loam
 H2—4 to 20 inches; silty clay
 H3—20 to 49 inches; silty clay
 R—49 to 49 inches; unweathered bedrock

111OA—Olpe-Kenoma complex, 3 to 15 percent slopes

Map Unit Composition

Olpe: 70 percent

Kenoma: 30 percent

Component Descriptions

Olpe

MLRA: 112 - Cherokee Prairies

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 3 to 15 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Very low (About 1.7 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Ecological site: Loamy Upland (pe35-42)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 15 inches; gravelly silt loam

H2—15 to 25 inches; very gravelly silty clay loam

H3—25 to 60 inches; extremely gravelly silty clay

Kenoma

MLRA: 112 - Cherokee Prairies

Landform: Divide on upland

Parent material: Silty and clayey residuum weathered from limestone-shale

Slope: 3 to 7 percent

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: High (About 9.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high

Ecological site: Clay Upland (pe35-42)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 10 inches; silt loam

H2—10 to 38 inches; silty clay

H3—38 to 60 inches; silty clay

111VA—Vinland loam, 4 to 10 percent slopes

Map Unit Composition

Vinland: 100 percent

Component Descriptions

Vinland

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Parent material: Sandy and silty residuum weathered from shale, unspecified

Slope: 4 to 10 percent

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Somewhat excessively drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 4.1 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe35-42)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 12 inches; loam

H2—12 to 19 inches; loam

Cr—19 to 59 inches; weathered bedrock

205CA—Catoosa silt loam, 0 to 2 percent slopes

Map Unit Composition

Catoosa: 85 percent

Minor components: 15 percent

Component Descriptions

Catoosa

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Hillslope position: Summit

Parent material: Residuum weathered from limestone

Slope: 0 to 2 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 5.8 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 10 inches; silt loam
 H2—10 to 30 inches; silty clay loam
 R—30 to 34 inches; unweathered bedrock

Minor Components

Kenoma

Composition: About 5 percent
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Apperson

Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Shidler

Composition: About 5 percent
Slope: 1 to 8 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Limy (pe35-42)

205EB—Eram silt loam, 1 to 3 percent slopes

Map Unit Composition

Eram: 90 percent
 Minor components: 10 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Low (About 4.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; silt loam
 H2—9 to 32 inches; silty clay
 Cr—32 to 36 inches; weathered bedrock

Minor Components

Bates

Composition: About 5 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Ringo

Composition: About 5 percent
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

205EC—Eram silt loam, 3 to 7 percent slopes

Map Unit Composition

Eram: 90 percent
 Minor components: 10 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high

Ecological site: Clay Upland (pe35-42)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 9 inches; silt loam

H2—9 to 32 inches; silty clay

Cr—32 to 36 inches; weathered bedrock

Minor Components

Ringo

Composition: About 5 percent

Slope: 3 to 15 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Moderately well drained

Ecological site: Clay Upland (pe35-42)

Bates

Composition: About 5 percent

Slope: 3 to 7 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained

Ecological site: Loamy Upland (pe35-42)

205ND—Niotaze-Darnell complex, 4 to 30 percent slopes

Map Unit Composition

Niotaze: 50 percent

Darnell: 35 percent

Minor components: 15 percent

Component Descriptions

Niotaze

MLRA: 84A - Cross Timbers

Landform: Hillslope on upland

Parent material: Clayey residuum weathered from sandstone and shale

Slope: 4 to 30 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Low (About 4.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: Very high

Ecological site: Savannah (pe35-38)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 9 inches; cobbly fine sandy loam

H2—9 to 36 inches; silty clay

Cr—36 to 40 inches; unweathered bedrock

Darnell

MLRA: 84A - Cross Timbers

Landform: Hillslope on upland

Hillslope position: Backslope

Parent material: Loamy residuum weathered from sandstone

Slope: 4 to 15 percent

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Very low (About 2.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Shallow Savannah (pe35-38)

Land capability (nonirrigated): 6

Typical Profile:

H1—0 to 6 inches; fine sandy loam

H2—6 to 17 inches; fine sandy loam

Cr—17 to 21 inches; weathered bedrock

Minor Components

Stephenville

Composition: About 10 percent

Slope: 6 to 15 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained

Ecological site: Savannah (pe35-38)

Rock outcrop

Composition: About 5 percent

Drainage class: Well drained

205SF—Steedman gravelly silt loam, 4 to 25 percent slopes, stony

Map Unit Composition

Steedman: 90 percent

Minor components: 10 percent

Component Descriptions

Steedman

MLRA: 84A - Cross Timbers

Landform: Hillslope on upland

Parent material: Clayey residuum weathered from clayey shale

Slope: 4 to 25 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Low (About 4.1 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: Very high

Ecological site: Loamy Upland (pe35-38)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 8 inches; stony silt loam

H2—8 to 32 inches; silty clay

Cr—32 to 36 inches; weathered bedrock

Minor Components

Bates

Composition: About 5 percent

Slope: 4 to 7 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained

Ecological site: Loamy Upland (pe35-42)

Collinsville

Composition: About 5 percent

Geomorphic Position: hillslope on upland

Slope: 3 to 7 percent

Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)

Drainage class: Well drained

Ecological site: Shallow Sandstone (pe35-42)

205SM—Stephenville-Darnell fine sandy loams, 2 to 6 percent slopes

Map Unit Composition

Stephenville: 60 percent

Darnell: 30 percent

Minor components: 10 percent

Component Descriptions

Stephenville

MLRA: 84A - Cross Timbers

Landform: Hillslope on upland

Parent material: Fine-loamy residuum weathered from sandstone

Slope: 2 to 6 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 3.6 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Savannah (pe35-38)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 17 inches; fine sandy loam

H2—17 to 27 inches; sandy clay loam

Cr—27 to 31 inches; weathered bedrock

Darnell

MLRA: 84A - Cross Timbers

Landform: Hillslope on upland

Hillslope position: Summit, shoulder

Parent material: Loamy residuum weathered from sandstone

Slope: 2 to 6 percent

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Very low (About 2.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Shallow Savannah (pe35-38)

Land capability (nonirrigated): 4

Typical Profile:

H1—0 to 6 inches; fine sandy loam

H2—6 to 17 inches; fine sandy loam

Cr—17 to 21 inches; weathered bedrock

Minor Components

Niotaze

Composition: About 5 percent

Slope: 4 to 30 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Somewhat poorly drained
Ecological site: Savannah (pe35-38)

Prue

Composition: About 5 percent
Slope: 2 to 5 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

205ZB—Zaar silty clay, 1 to 4 percent slopes

Map Unit Composition

Zaar: 85 percent
 Minor components: 15 percent

Component Descriptions

Zaar

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Footslope
Parent material: Ancient alluvium and/or clayey colluvium and/or residuum weathered from shale
Slope: 1 to 4 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 24 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silty clay
 H2—10 to 60 inches; silty clay

Minor Components

Eram

Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Woodson

Composition: About 5 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe35-42)

207DD—Dennis silt loam, 1 to 3 percent slopes

Map Unit Composition

Dennis: 98 percent
 Minor components: 2 percent

Component Descriptions

Dennis

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 10 inches; silt loam
 H2—10 to 15 inches; silty clay loam
 H3—15 to 90 inches; silty clay

Minor Components

Eram

Composition: About 1 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Kenoma

Composition: About 1 percent
Slope: 1 to 2 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

207KA—Kenoma silt loam, 1 to 2 percent slopes**Map Unit Composition**

Kenoma: 98 percent
 Minor components: 2 percent

Component Descriptions**Kenoma**

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Parent material: Loess over ancient clayey alluvium and/or residuum weathered from limestone and shale

Slope: 1 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: High (About 10.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high

Ecological site: Clay Upland (pe35-42)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; silt loam
 H2—11 to 28 inches; silty clay
 H3—28 to 80 inches; silty clay

Minor Components**Woodson**

Composition: About 1 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Clay Upland (pe35-42)

Dennis

Composition: About 1 percent

Slope: 1 to 3 percent

Drainage class: Moderately well drained

Ecological site: Loamy Upland (pe35-42)

207KO—Kenoma-Olpe complex, 2 to 7 percent slopes**Map Unit Composition**

Kenoma: 50 percent
 Olpe: 30 percent
 Minor components: 20 percent

Component Descriptions**Kenoma**

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Parent material: Loess over ancient clayey alluvium and/or residuum weathered from limestone and shale

Slope: 2 to 7 percent

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: High (About 10.6 inches)

Shrink-swell potential: Very high (About 17.0 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high

Ecological site: Clay Upland (pe35-42)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 11 inches; silt loam
 H2—11 to 28 inches; silty clay
 H3—28 to 60 inches; silty clay

Olpe

MLRA: 112 - Cherokee Prairies

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 2 to 7 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Very low (About 2.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: High

Ecological site: Loamy Upland (pe35-42)

Land capability (nonirrigated): 4

Typical Profile:
 H1—0 to 6 inches; silt loam

H2—6 to 15 inches; very gravelly silty clay loam
 H3—15 to 45 inches; extremely gravelly silty clay
 H4—45 to 60 inches; gravelly silty clay

Minor Components

Dennis

Composition: About 10 percent
Slope: 3 to 6 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Eram

Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 4 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

207VC—Verdigris Soils, channeled

Map Unit Composition

Verdigris: 90 percent
 Minor components: 2 percent

Component Descriptions

Verdigris

MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Silty alluvium
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 25 inches; silt loam
 H2—25 to 82 inches; silty clay loam

Minor Components

Leanna

Composition: About 1 percent

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Lowland (pe35-42)

Hepler

Composition: About 1 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe35-42)

AED—Arents, Earthen Dam

At—Aquents, frequently flooded

Map Unit Composition

Aquents: 100 percent

Component Descriptions

Aquents

MLRA: 76 - Bluestem Hills
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 5 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 60 inches; stratified variable

Ca—Chase silty clay loam, occasionally flooded

Map Unit Composition

Chase: 90 percent
 Minor components: 10 percent

Component Descriptions

Chase

MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Silty and clayey alluvium
Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.9 inches)
Shrink-swell potential: Moderate (About 5.4 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: High
Ecological site: Loamy Lowland (pe30-36)
Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 14 inches; silty clay loam
 H2—14 to 45 inches; silty clay loam
 H3—45 to 60 inches; silty clay

Minor Components

Ivan

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe30-36)

Reading

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe30-36)

Ce—Clime stony silty clay loam, 20 to 30 percent slopes

Map Unit Composition

Clime: 100 percent

Component Descriptions

Clime

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from calcareous shale
Slope: 20 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Limy Upland (pe30-36)
Land capability (nonirrigated): 7e

Typical Profile:

H1—0 to 9 inches; stony silty clay loam
 H2—9 to 18 inches; silty clay
 H3—18 to 30 inches; silty clay
 Cr—30 to 34 inches; unweathered bedrock

Cm—Clime silty clay, 3 to 7 percent slopes

Map Unit Composition

Clime: 90 percent
 Minor components: 10 percent

Component Descriptions

Clime

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from calcareous shale
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.4 inches)
Shrink-swell potential: High (About 7.7 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Limy Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 11 inches; silty clay
 H2—11 to 23 inches; silty clay
 H3—23 to 33 inches; silty clay
 Cr—33 to 37 inches; unweathered bedrock

Minor Components

Martin

Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe30-36)

Cs—Clime-Sogn complex, 5 to 20 percent slopes

Map Unit Composition

Clime: 60 percent
Sogn: 20 percent
Minor components: 20 percent

Component Descriptions

Clime

MLRA: 76 - Bluestem Hills, 76 - Bluestem Hills

Landform: Ridge on upland

Hillslope position: Backslope

Parent material: Silty and clayey residuum weathered from calcareous shale

Slope: 5 to 20 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Low (About 4.4 inches)

Shrink-swell potential: High (About 7.7 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Ecological site: Limy Upland (pe30-36)

Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 11 inches; silty clay

H2—11 to 23 inches; silty clay

H3—23 to 33 inches; silty clay

Cr—33 to 37 inches; unweathered bedrock

Sogn

MLRA: 76 - Bluestem Hills, 76 - Bluestem Hills

Landform: Ridge on upland

Hillslope position: Backslope

Parent material: Loamy residuum weathered from limestone

Slope: 5 to 20 percent

Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very low (About 1.4 inches)

Shrink-swell potential: Moderate (About 4.2 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Shallow Limy (pe30-36)

Land capability (nonirrigated): 7s

Typical Profile:

H1—0 to 7 inches; silty clay loam

R—7 to 11 inches; unweathered bedrock

Minor Components

Dwight

Composition: About 5 percent

Geomorphic Position: divide on hillslope on upland

Slope: 0 to 2 percent

Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)

Drainage class: Moderately well drained

Ecological site: Clay Pan (pe30-36)

Labette

Composition: About 5 percent

Geomorphic Position: hillslope on upland

Slope: 1 to 4 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained

Ecological site: Loamy Upland (pe30-36)

Rock outcrop

Composition: About 5 percent

Martin

Composition: About 5 percent

Geomorphic Position: hillslope on upland

Slope: 4 to 7 percent

Drainage class: Moderately well drained

Ecological site: Loamy Upland (pe30-36)

De—Dennis silt loam, 1 to 4 percent slopes

Map Unit Composition

Dennis: 100 percent

Component Descriptions

Dennis

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Hillslope position: Summit, backslope

Parent material: Silty and clayey residuum weathered from shale

Slope: 1 to 4 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 12 inches; silt loam
 H2—12 to 17 inches; silty clay loam
 H3—17 to 60 inches; silty clay

Dn—Dennis silt loam, 4 to 7 percent slopes

Map Unit Composition

Dennis: 100 percent

Component Descriptions

Dennis

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope, footslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: Very high
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 12 inches; silt loam
 H2—12 to 17 inches; silty clay loam
 H3—17 to 60 inches; silty clay

Ds—Dennis silty clay loam, 2 to 6 percent slopes, eroded

Map Unit Composition

Dennis: 100 percent

Component Descriptions

Dennis

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Backslope, footslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 2 to 6 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.3 inches)
Shrink-swell potential: Very high (About 9.2 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 6 inches; silty clay loam
 H2—6 to 16 inches; silty clay loam
 H3—16 to 60 inches; silty clay

Dw—Dwight silt loam, 0 to 2 percent slopes

Map Unit Composition

Dwight: 90 percent
 Minor components: 10 percent

Component Descriptions

Dwight

MLRA: 76 - Bluestem Hills
Landform: Divide on hillslope on upland
Parent material: Silty and clayey residuum weathered from cherty limestone
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)

Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Clay Pan (pe30-36)
Land capability (nonirrigated): 4s

Typical Profile:

H1—0 to 4 inches; silt loam
 H2—4 to 32 inches; clay
 H3—32 to 44 inches; silty clay
 R—44 to 48 inches; unweathered bedrock

Minor Components

Labette

Composition: About 5 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe30-36)

Zaar

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe30-36)

Eb—Eram silty clay loam, 1 to 4 percent slopes

Map Unit Composition

Eram: 85 percent
 Minor components: 15 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.9 inches)

Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: High
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silty clay loam
 H2—10 to 33 inches; silty clay
 Cr—33 to 37 inches; weathered bedrock

Minor Components

Unnamed Soil

Composition: About 10 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Dwight

Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

Ec—Eram silty clay loam, 4 to 7 percent slopes

Map Unit Composition

Eram: 90 percent
 Minor components: 10 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 4 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches

Runoff class: Very high
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 10 inches; silty clay loam
 H2—10 to 33 inches; silty clay
 Cr—33 to 37 inches; weathered bedrock

Minor Components

Unnamed Soil

Composition: About 10 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Eh—Eram silty clay loam, 3 to 7 percent slopes, eroded

Map Unit Composition

Eram: 90 percent

Component Descriptions

Eram

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.1 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: Very high
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 6 inches; silty clay loam
 H2—6 to 21 inches; silty clay
 Cr—21 to 25 inches; weathered bedrock

Ft—Florence-Labette complex, 2 to 12 percent slopes

Map Unit Composition

Florence: 60 percent
 Labette: 25 percent
 Minor components: 15 percent

Component Descriptions

Florence

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from cherty limestone
Slope: 2 to 12 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Low (About 4.2 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 13 inches; gravelly silt loam
 H2—13 to 19 inches; very gravelly silty clay loam
 H3—19 to 45 inches; very gravelly clay
 R—45 to 49 inches; unweathered bedrock

Labette

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone and shale
Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 5.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 31 inches; silty clay
 R—31 to 35 inches; unweathered bedrock

Minor Components**Clime**

Composition: About 8 percent
Geomorphic Position: hillside on upland
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Limy Upland (pe30-36)

Dwight

Composition: About 7 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

H3—42 to 66 inches; silty clay

Minor Components**Dwight**

Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

Labette

Composition: About 5 percent
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe30-36)

Ladysmith

Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe25-34)

IBB—Irwin silty clay loam, 1 to 3 percent slopes**Map Unit Composition**

Irwin: 85 percent
 Minor components: 15 percent

Component Descriptions**Irwin**

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Shoulder
Parent material: Silty and clayey residuum weathered from clayey shale
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Upland (pe25-34)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; silty clay loam
 H2—11 to 42 inches; silty clay

Ic—Ivan silt loam, channeled**Map Unit Composition**

Ivan: 85 percent
 Minor components: 15 percent

Component Descriptions**Ivan**

MLRA: 76 - Bluestem Hills
Landform: Channel on flood plain on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.9 inches)
Shrink-swell potential: Moderate (About 4.7 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe30-36)
Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 27 inches; silt loam
 H2—27 to 60 inches; silt loam

Minor Components**Chase**

Composition: About 4 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe30-36)

Osage

Composition: About 4 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe30-36)

Dennis

Composition: About 4 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe30-36)

Martin

Composition: About 3 percent
Geomorphic Position: hillslope on upland
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe30-36)

If—Ivan silt loam, occasionally flooded**Map Unit Composition**

Ivan: 90 percent
 Minor components: 10 percent

Component Descriptions**Ivan**

MLRA: 76 - Bluestem Hills
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 13.2 inches)
Shrink-swell potential: Moderate (About 4.7 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe30-36)
Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 38 inches; silt loam
 H2—38 to 60 inches; silt loam

Minor Components**Chase**

Composition: About 10 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe30-36)

Ka—Kenoma silt loam, 1 to 4 percent slopes**Map Unit Composition**

Kenoma: 100 percent

Component Descriptions**Kenoma**

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Loess over ancient clayey alluvium and/or residuum weathered from limestone and shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; silt loam
 H2—11 to 33 inches; silty clay
 H3—33 to 60 inches; silty clay loam

KAA—Kenoma silt loam, 1 to 3 percent slopes**Map Unit Composition**

Kenoma: 91 percent
 Minor components: 9 percent

Component Descriptions**Kenoma**

MLRA: 112 - Cherokee Prairies
Landform: Ridge on upland
Hillslope position: Summit
Parent material: Loess over ancient clayey alluvium and/or residuum weathered from limestone and shale
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.7 inches)
Shrink-swell potential: High (About 8.7 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; silt loam
 H2—9 to 25 inches; silty clay
 H3—25 to 41 inches; silty clay
 H4—41 to 60 inches; silty clay

Minor Components**Catoosa**

Composition: About 3 percent
Geomorphic Position: ridge on upland
Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Dwight

Composition: About 3 percent
Geomorphic Position: hillslope on paleoterrace on upland
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe30-36)

Olpe

Composition: About 3 percent

Geomorphic Position: ridge on paleoterrace on upland
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Ke—Kenoma silty clay loam, 2 to 5 percent slopes, eroded**Map Unit Composition**

Kenoma: 100 percent

Component Descriptions**Kenoma**

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Shoulder, summit
Parent material: Loess over ancient clayey alluvium and/or residuum weathered from limestone and shale
Slope: 2 to 5 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: Moderate (About 5.6 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 4 inches; silty clay loam
 H2—4 to 36 inches; silty clay
 H3—36 to 60 inches; silty clay loam

La—Labette silty clay loam, 1 to 4 percent slopes**Map Unit Composition**

Labette: 90 percent
 Minor components: 10 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills

Landform: Hillslope on upland

Hillslope position: Summit, shoulder

Parent material: Silty and clayey residuum weathered from limestone and shale

Slope: 1 to 4 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)

Available water capacity: Low (About 4.6 inches)

Shrink-swell potential: Very high (About 14.0 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe30-36)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 9 inches; silty clay loam

H2—9 to 19 inches; silty clay loam

H3—19 to 27 inches; silty clay

R—27 to 31 inches; unweathered bedrock

Minor Components

Sogn

Composition: About 10 percent

Geomorphic Position: hillslope on upland

Slope: 5 to 20 percent

Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained

Ecological site: Shallow Limy (pe30-36)

Slope: 1 to 3 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Moderate (About 6.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: High

Ecological site: Loamy Upland (pe30-36)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 13 inches; silty clay loam

H2—13 to 38 inches; silty clay

R—38 to 42 inches; unweathered bedrock

Minor Components

Dwight

Composition: About 5 percent

Slope: 0 to 2 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Moderately well drained

Ecological site: Clay Pan (pe30-36)

Irwin

Composition: About 5 percent

Geomorphic Position: hillside on upland

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Clay Upland (pe25-34)

Ld—Labette-Dwight complex, 0 to 3 percent slopes

LAA—Labette silty clay loam, 1 to 3 percent slopes

Map Unit Composition

Labette: 90 percent

Minor components: 10 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills

Landform: Hillslope on upland

Parent material: Silty and clayey residuum weathered from limestone-shale

Map Unit Composition

Labette: 65 percent

Dwight: 30 percent

Minor components: 5 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills

Landform: Hillslope on upland

Hillslope position: Summit

Parent material: Silty and clayey residuum weathered from limestone and shale

Slope: 0 to 3 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Low (About 4.6 inches)
Shrink-swell potential: Very high (About 14.0 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 19 inches; silty clay loam
 H3—19 to 27 inches; silty clay
 R—27 to 31 inches; unweathered bedrock

Dwight

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Loess over clayey ancient alluvium over residuum
Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.8 inches)
Shrink-swell potential: Very high (About 9.7 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Pan (pe30-36)
Land capability (nonirrigated): 4s

Typical Profile:

H1—0 to 4 inches; silt loam
 H2—4 to 32 inches; clay
 H3—32 to 44 inches; silty clay
 R—44 to 48 inches; unweathered bedrock

Minor Components

Zaar

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe30-36)

**Ls—Labette-Sogn silty clay loams,
0 to 8 percent slopes**

Map Unit Composition

Labette: 50 percent
 Sogn: 35 percent
 Minor components: 15 percent

Component Descriptions

Labette

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone and shale
Slope: 1 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 26 inches; silty clay
 R—26 to 30 inches; unweathered bedrock

Sogn

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Loamy residuum weathered from limestone
Slope: 0 to 8 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 3.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Limy (pe30-36)
Land capability (nonirrigated): 7s

Typical Profile:

H1—0 to 15 inches; silty clay loam
R—15 to 19 inches; unweathered bedrock

Minor Components**Clime**

Composition: About 10 percent
Geomorphic Position: hillside on upland
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Limy Upland (pe30-36)

Rock outcrop

Composition: About 5 percent

LUU—Lula silt loam, 0 to 2 percent slopes**Map Unit Composition**

Lula: 90 percent
Minor components: 10 percent

Component Descriptions**Lula**

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Fine-silty residuum weathered from limestone
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 9 inches; silt loam
H2—9 to 18 inches; silty clay loam
H3—18 to 57 inches; silty clay loam
R—57 to 65 inches; unweathered bedrock

Minor Components**Clareson**

Composition: About 5 percent
Slope: 1 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Kenoma

Composition: About 5 percent
Slope: 1 to 2 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

M-W—Miscellaneous Water**Map Unit Composition**

Miscellaneous Water: 100 percent

Component Descriptions**Miscellaneous Water**

MLRA: 76 - Bluestem Hills
Depth to seasonal water saturation: More than 6 feet

Ma—Martin silty clay loam, 1 to 4 percent slopes**Map Unit Composition**

Martin: 100 percent

Component Descriptions**Martin**

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Hillslope position: Footslope
Parent material: Silty and clayey colluvium derived from limestone-shale over silty and clayey residuum weathered from limestone-shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 11.3 inches)

Shrink-swell potential: High (About 7.7 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About inches
Runoff class: Medium
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; silty clay loam
 H2—11 to 52 inches; silty clay
 H3—52 to 60 inches; clay

Mb—Martin silty clay loam, 4 to 7 percent slopes

Map Unit Composition

Martin: 90 percent
 Minor components: 10 percent

Component Descriptions

Martin

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey colluvium derived from limestone and shale over silty and clayey residuum weathered from limestone and shale
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; silty clay loam
 H2—11 to 52 inches; silty clay
 H3—52 to 60 inches; silty clay

Minor Components

Clime

Composition: About 10 percent
Geomorphic Position: hillside on upland
Slope: 5 to 20 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Limy Upland (pe30-36)

Me—Martin silty clay, 3 to 7 percent slopes, eroded

Map Unit Composition

Martin: 90 percent
 Minor components: 10 percent

Component Descriptions

Martin

MLRA: 76 - Bluestem Hills
Landform: Hillslope on upland
Parent material: Silty and clayey colluvium derived from limestone and shale over silty and clayey residuum weathered from limestone and shale
Slope: 3 to 7 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 7 inches; silty clay
 H2—7 to 52 inches; silty clay
 H3—52 to 60 inches; silty clay

Minor Components

Clime

Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Limy Upland (pe30-36)

MSS—Mason silt loam, rarely flooded**Map Unit Composition**

Mason: 90 percent
 Minor components: 10 percent

Component Descriptions**Mason**

MLRA: 76 - Bluestem Hills
Landform: Stream terrace on river valley
Parent material: Silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 14 inches; silt loam
 H2—14 to 60 inches; silty clay loam

Minor Components**Lanton**

Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe35-42)

Osage

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

Na—Newtonia silt loam, 0 to 2 percent slopes**Map Unit Composition**

Newtonia: 100 percent

Component Descriptions**Newtonia**

MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone and shale
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Upland (pe30-36)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 12 inches; silt loam
 H2—12 to 18 inches; silty clay loam
 H3—18 to 26 inches; silty clay loam
 H4—26 to 45 inches; silty clay loam
 H5—45 to 60 inches; silty clay

Nd—Niotaze-Darnell complex, 0 to 6 percent slopes**Map Unit Composition**

Niotaze: 65 percent
 Darnell: 30 percent
 Minor components: 5 percent

Component Descriptions**Niotaze**

MLRA: 84A - Cross Timbers
Landform: Hillslope on upland
Parent material: Clayey residuum weathered from sandstone and shale
Slope: 3 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: Very high
Ecological site: Savannah (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 9 inches; loam
 H2—9 to 27 inches; clay
 Cr—27 to 31 inches; unweathered bedrock

Darnell

MLRA: 84A - Cross Timbers
Landform: Hillslope on upland
Hillslope position: Shoulder
Parent material: Loamy material weathered from sandstone
Slope: 1 to 6 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Shallow Savannah (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 6 inches; fine sandy loam
 H2—6 to 16 inches; fine sandy loam
 Cr—16 to 20 inches; weathered bedrock

Minor Components

Rock outcrop

Composition: About 5 percent

Nz—Niotaze-Darnell complex, 6 to 35 percent slopes

Map Unit Composition

Niotaze: 75 percent
 Darnell: 15 percent
 Minor components: 10 percent

Component Descriptions

Niotaze

MLRA: 84A - Cross Timbers
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Clayey residuum weathered from sandstone and shale

Slope: 6 to 35 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Low (About 4.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 24 inches
Runoff class: Very high
Ecological site: Savannah (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 9 inches; loam
 H2—9 to 27 inches; silty clay
 Cr—27 to 31 inches; weathered bedrock

Darnell

MLRA: 84A - Cross Timbers
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Loamy residuum
Slope: 6 to 35 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Savannah (pe35-42)
Land capability (nonirrigated): 7e

Typical Profile:

H1—0 to 6 inches; fine sandy loam
 H2—6 to 16 inches; fine sandy loam
 Cr—16 to 20 inches; weathered bedrock

Minor Components

Rock outcrop

Composition: About 10 percent

Od—Oil Waste Land

Op—Olpe gravelly silt loam, 4 to 15 percent slopes**Map Unit Composition**

Olpe: 85 percent
 Minor components: 15 percent

Component Descriptions**Olpe**

MLRA: 112 - Cherokee Prairies
Landform: Paleoterrace on upland
Parent material: Clayey alluvium
Slope: 4 to 15 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Very low (About 2.0 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 13 inches; gravelly silt loam
 H2—13 to 19 inches; very gravelly silty clay loam
 H3—19 to 49 inches; very gravelly silty clay
 H4—49 to 60 inches; gravelly clay

Minor Components**Kenoma**

Composition: About 8 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe30-36)

Labette

Composition: About 7 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe30-36)

Os—Osage silty clay, occasionally flooded**Map Unit Composition**

Osage: 95 percent

Minor components: 5 percent

Component Descriptions**Osage**

MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 6.3 inches)
Shrink-swell potential: Very high (About 17.0 LEP)
Flooding hazard: Occasional
Ponding hazard: Occasional
Depth to seasonal water saturation: About 0 to 12 inches
Runoff class: High
Ecological site: Clay Lowland (pe30-36)
Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 14 inches; silty clay
 H2—14 to 60 inches; silty clay

Minor Components**Ivan**

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe30-36)

Pt—Pits, Quarries

General Considerations: Pits are open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material. Kinds include Pits, mine; Pits, gravel; and Pits, quarry. Commonly, pits are closely associated with Dumps.

Re—Reading silt loam, 0 to 2 percent slopes, rarely flooded**Map Unit Composition**

Reading: 90 percent
 Minor components: 10 percent

Component Descriptions

Reading*MLRA:* 76 - Bluestem Hills*Landform:* Stream terrace on river valley*Parent material:* Silty alluvium*Slope:* 0 to 1 percent*Drainage class:* Well drained*Slowest permeability:* Moderately slow (About 0.20 in/hr)*Available water capacity:* High (About 11.4 inches)*Shrink-swell potential:* Moderate (About 4.4 LEP)*Flooding hazard:* Rare*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Negligible*Ecological site:* Loamy Lowland (pe30-36)*Land capability (nonirrigated):* 1*Typical Profile:*

H1—0 to 13 inches; silt loam

H2—13 to 44 inches; silty clay loam

H3—44 to 60 inches; silty clay loam

Minor Components**Chase***Composition:* About 5 percent*Slope:* 0 to 2 percent*Drainage class:* Somewhat poorly drained*Ecological site:* Loamy Lowland (pe30-36)**Reading***Composition:* About 5 percent*Slope:* 7 to 12 percent*Drainage class:* Well drained*Ecological site:* Loamy Lowland (pe30-36)**St—Steedman stony loam, 3 to 12 percent slopes****Map Unit Composition**

Steedman: 85 percent

Minor components: 15 percent

Component Descriptions**Steedman***MLRA:* 84A - Cross Timbers*Landform:* Hillslope on upland*Hillslope position:* Backslope*Parent material:* Clayey residuum weathered from clayey shale*Slope:* 3 to 12 percent*Surface fragments:* About*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)*Drainage class:* Moderately well drained*Slowest permeability:* Slow (About 0.06 in/hr)*Available water capacity:* Low (About 3.8 inches)*Shrink-swell potential:* High (About 7.2 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* About 12 to 24 inches*Runoff class:* Very high*Ecological site:* Loamy Upland (pe35-42)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 8 inches; stony loam

H2—8 to 30 inches; silty clay

Cr—30 to 34 inches; weathered bedrock

Minor Components**Rock outcrop***Composition:* About 10 percent**Darnell***Composition:* About 5 percent*Geomorphic Position:* hillslope on upland*Slope:* 6 to 12 percent*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)*Drainage class:* Well drained*Ecological site:* Shallow Savannah (pe35-42)**W—Water****Wo—Woodson silt loam, 0 to 2 percent slopes****Map Unit Composition**

Woodson: 90 percent

Minor components: 10 percent

Component Descriptions**Woodson***MLRA:* 112 - Cherokee Prairies*Landform:* Divide on upland*Parent material:* Silty and clayey alluvium over silty and clayey residuum weathered from clayey

shale

Slope: 0 to 2 percent*Drainage class:* Somewhat poorly drained*Slowest permeability:* Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.7 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 24 inches

Runoff class: High

Ecological site: Clay Upland (pe35-42)

Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 8 inches; silt loam

H2—8 to 29 inches; silty clay

H3—29 to 75 inches; silty clay

Minor Components

Summit

Composition: About 5 percent

Slope: 1 to 4 percent

Drainage class: Moderately well drained

Ecological site: Loamy Upland (pe35-42)

Kenoma

Composition: About 5 percent

Slope: 1 to 2 percent

Drainage class: Moderately well drained

Ecological site: Clay Upland (pe35-42)

Za—Zaar silty clay, 0 to 2 percent slopes

Map Unit Composition

Zaar: 100 percent

Component Descriptions

Zaar

MLRA: 112 - Cherokee Prairies

Landform: Hillslope on upland

Hillslope position: Footslope

Parent material: Ancient alluvium and/or clayey colluvium and/or residuum weathered from shale

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: High

Ecological site: Clay Upland (pe30-36)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 13 inches; silty clay

H2—13 to 60 inches; silty clay