



United States
Department of
Agriculture

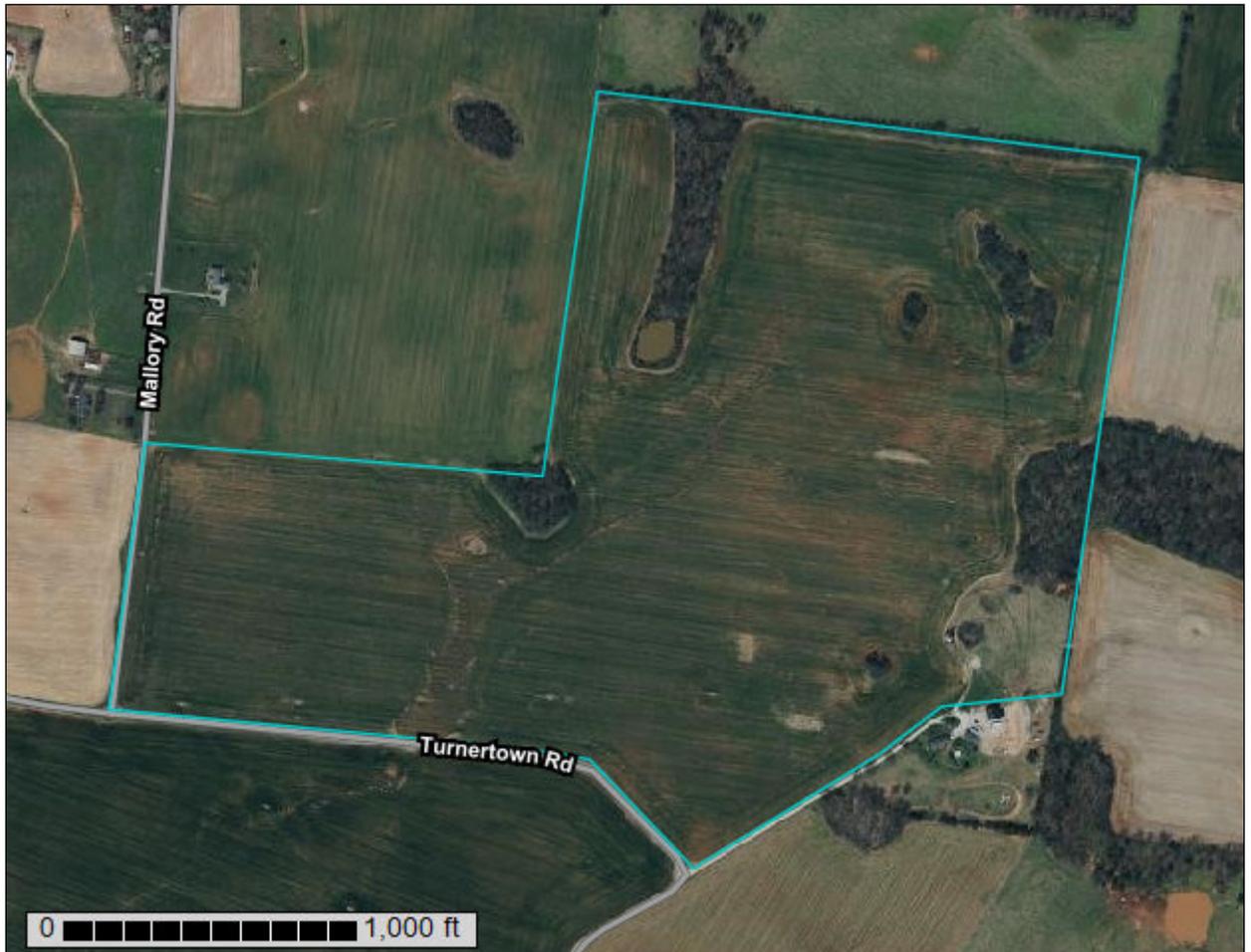
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Simpson County, Kentucky**

McMillan Farms, Inc



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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

FARM MAP

Customer: McMillan Farms, Inc

Assisted By: Hunter Bevil

Legal Description: FSN:3166 TN: 101
Location: 36.802331 -86.673929

Agency: USDA-NRCS
Simpson County , KY



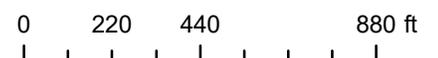
Legend

Landowner

□ McMillan Farms, Inc



1 in = 477 ft



Custom Soil Resource Report Soil Map



Map Scale: 1:6,820 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Simpson County, Kentucky
 Survey Area Data: Version 16, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 21, 2021—Mar 30, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FcB	Fredonia-Vertrees complex, 2 to 6 percent slopes	6.5	5.3%
PeA	Pembroke silt loam, 0 to 2 percent slopes	36.8	29.8%
PeB	Pembroke silt loam, 2 to 6 percent slopes	40.6	32.9%
PeC	Pembroke silt loam, 6 to 12 percent slopes	2.8	2.3%
VsC3	Vertrees silty clay loam, 6 to 12 percent slopes, severely eroded	36.1	29.2%
W	Water	0.8	0.6%
Totals for Area of Interest		123.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

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was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Simpson County, Kentucky

FcB—Fredonia-Vertrees complex, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: lg3f
Elevation: 620 to 760 feet
Mean annual precipitation: 45 to 59 inches
Mean annual air temperature: 47 to 69 degrees F
Frost-free period: 167 to 215 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Fredonia and similar soils: 58 percent
Vertrees and similar soils: 28 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fredonia

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 40 inches: silty clay
R - 40 to 50 inches: bedrock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Vertrees

Setting

Landform: Ridges
Landform position (two-dimensional): Summit

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Landform position (three-dimensional): Interfluve

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Clayey residuum weathered from limestone and shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 57 inches: silty clay

H3 - 57 to 61 inches: clay

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Baxter

Percent of map unit: 5 percent

Hydric soil rating: No

Mountview

Percent of map unit: 5 percent

Hydric soil rating: No

Other soils

Percent of map unit: 4 percent

Hydric soil rating: No

PeA—Pembroke silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2v5c2

Elevation: 480 to 720 feet

Mean annual precipitation: 41 to 59 inches

Mean annual air temperature: 45 to 69 degrees F

Frost-free period: 164 to 215 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Pembroke and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pembroke

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

Typical profile

Ap - 0 to 9 inches: silt loam

Bt1 - 9 to 18 inches: silt loam

2Bt2 - 18 to 62 inches: silty clay loam

2Bt3 - 62 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 1

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Crider

Percent of map unit: 5 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Bedford

Percent of map unit: 4 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

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Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Nolin, occasionally flooded

Percent of map unit: 1 percent
Landform: Sinkholes
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Baxter

Percent of map unit: 0 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

PeB—Pembroke silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: lg3s
Elevation: 540 to 760 feet
Mean annual precipitation: 45 to 59 inches
Mean annual air temperature: 47 to 69 degrees F
Frost-free period: 167 to 215 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Pembroke and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pembroke

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 40 inches: silty clay loam
H3 - 40 to 68 inches: silty clay

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Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 2 percent

Hydric soil rating: No

Baxter

Percent of map unit: 1 percent

Hydric soil rating: No

Fredonia

Percent of map unit: 1 percent

Hydric soil rating: No

Mountview

Percent of map unit: 1 percent

Hydric soil rating: No

PeC—Pembroke silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: lg3t

Elevation: 550 to 760 feet

Mean annual precipitation: 45 to 59 inches

Mean annual air temperature: 47 to 69 degrees F

Frost-free period: 167 to 215 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Pembroke and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pembroke

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 40 inches: silty clay loam
H3 - 40 to 68 inches: silty clay

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 4 percent
Hydric soil rating: No

Baxter

Percent of map unit: 2 percent
Hydric soil rating: No

Fredonia

Percent of map unit: 2 percent
Hydric soil rating: No

Mountview

Percent of map unit: 2 percent
Hydric soil rating: No

VsC3—Vertrees silty clay loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: lg41
Elevation: 560 to 710 feet
Mean annual precipitation: 45 to 59 inches
Mean annual air temperature: 47 to 69 degrees F
Frost-free period: 167 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Vertrees, severely eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vertrees, Severely Eroded

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone, sandstone, and shale

Typical profile

H1 - 0 to 3 inches: silty clay loam
H2 - 3 to 15 inches: silty clay
H3 - 15 to 60 inches: clay

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 4 percent
Hydric soil rating: No

Baxter

Percent of map unit: 2 percent
Hydric soil rating: No

Mountview

Percent of map unit: 2 percent
Hydric soil rating: No

Pembroke

Percent of map unit: 2 percent
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: lg42
Mean annual precipitation: 45 to 59 inches
Mean annual air temperature: 47 to 69 degrees F
Frost-free period: 167 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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data. A more detailed description can be generated by the "Map Unit Description" report.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief)

Simpson County, Kentucky

Map Unit: FcB—Fredonia-Vertrees complex, 2 to 6 percent slopes

Description Category: Irr_Grp

Irr_Grp 13 Moderately deep well drained clayey soils with moderately slow to slow permeability.

Description Category: PHG

PHG-7 Moderately deep upland soils. Moderately deep, silty clay loam, silt loam or fine sandy loam soils of the uplands with slopes about 6 to 30 percent and moderate productivity potential.

Map Unit: PeA—Pembroke silt loam, 0 to 2 percent slopes

Description Category: Irr_Grp

Irr_Grp 4 Deep well drained fine-silty or coarse-silty soils with moderate permeability.

Description Category: PHG

PHG-5 Deep well drained upland soils 0-30%. Deep, well drained silt loam, loam and fine sandy loam soils of the uplands and stream terraces with slopes of 0 to 30 percent. Some have gravelly and sandy subsoils. Productivity potential is moderate to high.

Map Unit: PeB—Pembroke silt loam, 2 to 6 percent slopes

Description Category: Irr_Grp

Irr_Grp 4 Deep well drained fine-silty or coarse-silty soils with moderate permeability.