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Natural
Resources
Conservation
Service

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Agriculture and other
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Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Columbia County, Florida**

JTC Farm



November 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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.

Custom Soil Resource Report
Soil Map

82° 44' 23" W

82° 43' 58" W

29° 54' 52" N

29° 54' 52" N



29° 54' 22" N

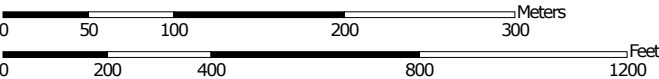
29° 54' 22" N

82° 44' 23" W

82° 43' 58" W



Map Scale: 1:4,430 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84

Custom Soil Resource Report

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 1:24,000.

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: <http://websoilsurvey.nrcs.usda.gov>
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: Columbia County, Florida
Survey Area Data: Version 11, Sep 29, 2015

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

Date(s) aerial images were photographed: Dec 29, 2010—Jan 22, 2011

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

Columbia County, Florida (FL023)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Alpin fine sand, 0 to 5 percent slopes	7.4	10.2%
29	Lakeland fine sand, 0 to 5 percent slopes	63.4	87.3%
30	Lakeland fine sand, 5 to 12 percent slopes	1.8	2.5%
Totals for Area of Interest		72.7	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 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.

Columbia County, Florida

3—Alpin fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v174

Elevation: 30 to 190 feet

Mean annual precipitation: 51 to 59 inches

Mean annual air temperature: 66 to 70 degrees F

Frost-free period: 280 to 310 days

Farmland classification: Not prime farmland

Map Unit Composition

Alpin and similar soils: 80 percent

Minor components: 20 percent

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

Description of Alpin

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Eolian deposits or sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand

E - 6 to 65 inches: fine sand

Bt - 65 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands
(G138XA111FL)

Minor Components

Chipley

Percent of map unit: 8 percent

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Landform: Flats on marine terraces, rises on marine terraces, knolls on marine terraces

Landform position (two-dimensional): Footslope, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G138XA131FL)

Blanton

Percent of map unit: 8 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G138XA121FL)

Albany

Percent of map unit: 4 percent

Landform: Ridges on marine terraces

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Interfluve, tal

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G138XA131FL)

29—Lakeland fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: vrt5

Elevation: 330 to 660 feet

Mean annual precipitation: 50 to 58 inches

Mean annual air temperature: 64 to 72 degrees F

Frost-free period: 258 to 288 days

Farmland classification: Not prime farmland

Map Unit Composition

Lakeland and similar soils: 90 percent

Minor components: 10 percent

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

Description of Lakeland

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

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Across-slope shape: Linear

Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand

C1 - 6 to 55 inches: fine sand

C2 - 55 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G138XA111FL)

Minor Components

Blanton

Percent of map unit: 3 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Side slope, interfluvium

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G138XA121FL)

Alpin

Percent of map unit: 3 percent

Landform: Ridges on marine terraces, knolls on marine terraces, flats on marine terraces

Landform position (three-dimensional): Interfluvium

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G138XA111FL)

Chipley

Percent of map unit: 2 percent

Landform: Flats on marine terraces, rises on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluvium

Down-slope shape: Convex

Across-slope shape: Linear

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Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G138XA131FL)

Troup

Percent of map unit: 2 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluvium

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands
(G138XA111FL)

30—Lakeland fine sand, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: vrt7

Elevation: 330 to 660 feet

Mean annual precipitation: 50 to 58 inches

Mean annual air temperature: 64 to 72 degrees F

Frost-free period: 258 to 288 days

Farmland classification: Not prime farmland

Map Unit Composition

Lakeland and similar soils: 90 percent

Minor components: 10 percent

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

Description of Lakeland

Setting

Landform: Ridges on marine terraces, hills on marine terraces

Landform position (three-dimensional): Interfluvium, side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 3 inches: fine sand

C1 - 3 to 44 inches: fine sand

C2 - 44 to 80 inches: fine sand

Properties and qualities

Slope: 5 to 12 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

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Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Other vegetative classification: Sandy soils on strongly sloping to steep side slopes of xeric uplands (G138XA113FL)

Minor Components

Alpin

Percent of map unit: 4 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on strongly sloping to steep side slopes of xeric uplands (G138XA113FL)

Blanton

Percent of map unit: 3 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Side slope, interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G138XA121FL)

Chipley

Percent of map unit: 3 percent

Landform: Flats on marine terraces, rises on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G138XA131FL)

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Disaster Recovery Planning

Disaster recovery planning interpretations are tools for evaluating the suitability of soil for various aspects of recovery operations in response to catastrophic events such as hurricanes, earthquakes, large fires, or terrorist attacks. Example interpretations include burial of large numbers of dead cattle, disposal of large amounts of debris, and composting of vegetative materials.

Catastrophic Mortality, Large Animal Disposal, Trench

"Catastrophic mortality, large animal disposal, trench," is a method of disposing of dead animals by placing the carcasses in successive layers in an excavated trench. The carcasses are spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the filled trench area.

The interpretation is applicable to both heavily populated and sparsely populated areas. While some general observations may be made, onsite evaluation is required before the final site is selected. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater. The risk of contamination can be reduced or eliminated by installing systems designed to eliminate or reduce the adverse effects of limiting soil properties. Ratings are for soils in their present condition. The present land use is not considered in the ratings.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 or 7 feet). Because trenches may be as deep as 15 feet or more, however, geologic investigations are needed to determine the potential for pollution of ground water and to determine the design needed. These

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investigations, which are generally arranged by the trench developer, include examination of stratification, rock formations, and geologic conditions that might lead to the conducting of leachates to aquifers, wells, watercourses, and other water sources. The presence of hard, nonrippable bedrock, bedrock crevices, or highly permeable strata at or directly below the proposed trench bottom is undesirable because of the difficulty in excavation and the potential pollution of underground water.

Properties that influence the risk of pollution, ease of excavation, trafficability, and revegetation are major considerations. Soils that are flooded or have a water table within the depth of excavation present a potential pollution hazard and are difficult to excavate. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the trench. It may also cause difficulty in constructing trenches in which the trench bottom must be kept level and oriented to follow the contour of the land.

The ease with which the trench is dug and with which a soil can be used as daily and final cover is based largely on soil texture and consistence, which determine workability when the soil is dry and when it is wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over a layer of carcasses. The uppermost part of the final cover should be soil material that favors the growth of plants. It should not contain excess sodium or salts and should not be too acid. In comparison with other horizons, the surface layer in most soils has the best workability and the highest content of organic matter. Thus, it may be desirable to stockpile the surface layer for use in the final blanketing of the fill.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected of a properly designed and installed system. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

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Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Catastrophic Mortality, Large Animal Disposal, Trench

82° 44' 23" W

82° 43' 58" W

29° 54' 52" N

29° 54' 52" N



29° 54' 22" N

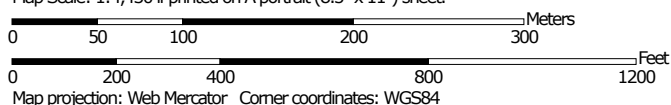
29° 54' 22" N

82° 44' 23" W

82° 43' 58" W



Map Scale: 1:4,430 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Background

 Aerial Photography

Soils

Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

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

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: <http://websoilsurvey.nrcs.usda.gov>
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: Columbia County, Florida
Survey Area Data: Version 11, Sep 29, 2015

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

Date(s) aerial images were photographed: Dec 29, 2010—Jan 22, 2011

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.

Tables—Catastrophic Mortality, Large Animal Disposal, Trench

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Map Unit — Columbia County, Florida (FL023)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
3	Alpin fine sand, 0 to 5 percent slopes	Very limited	Alpin (80%)	Too sandy (1.00)	7.4	10.2%
				Unstable excavation walls (1.00)		
				Seepage (0.50)		
			Chipley (8%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
			Blanton (8%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Albany (4%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
29	Lakeland fine sand, 0 to 5 percent slopes	Very limited	Lakeland (90%)	Seepage (1.00)	63.4	87.3%
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
			Blanton (3%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Alpin (3%)	Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Chipley (2%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		

Custom Soil Resource Report

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Map Unit — Columbia County, Florida (FL023)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Unstable excavation walls (1.00)		
30	Lakeland fine sand, 5 to 12 percent slopes	Very limited	Lakeland (90%)	Seepage (1.00)	1.8	2.5%
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Slope (0.04)		
			Alpin (4%)	Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
				Slope (0.04)		
			Blanton (3%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Chipley (3%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
Totals for Area of Interest					72.7	100.0%

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	72.7	100.0%
Totals for Area of Interest	72.7	100.0%

Rating Options—Catastrophic Mortality, Large Animal Disposal, Trench

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Catastrophic Mortality, Large Animal Disposal, Trench

"Catastrophic mortality, large animal disposal, trench," is a method of disposing of dead animals by placing the carcasses in successive layers in an excavated trench. The carcasses are spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the filled trench area.

The interpretation is applicable to both heavily populated and sparsely populated areas. While some general observations may be made, onsite evaluation is required before the final site is selected. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater. The risk of contamination can be reduced or eliminated by installing systems designed to eliminate or reduce the adverse effects of limiting soil properties. Ratings are for soils in their present condition. The present land use is not considered in the ratings.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 or 7 feet). Because trenches may be as deep as 15 feet or more, however, geologic investigations are needed to determine the potential for pollution of ground water and to determine the design needed. These investigations, which are generally arranged by the trench developer, include examination of stratification, rock formations, and geologic conditions that might lead to the conducting of leachates to aquifers, wells, watercourses, and other water sources. The presence of hard, nonrippable bedrock, bedrock crevices, or highly permeable strata at or directly below the proposed trench bottom is undesirable because of the difficulty in excavation and the potential pollution of underground water.

Properties that influence the risk of pollution, ease of excavation, trafficability, and revegetation are major considerations. Soils that are flooded or have a water table within the depth of excavation present a potential pollution hazard and are difficult to excavate. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the trench. It may also cause difficulty in constructing trenches in which the trench bottom must be kept level and oriented to follow the contour of the land.

The ease with which the trench is dug and with which a soil can be used as daily and final cover is based largely on soil texture and consistence, which determine workability when the soil is dry and when it is wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over a layer of carcasses. The uppermost part of the final cover should be soil material that favors the growth of plants. It should not contain excess sodium or salts and should not be too acid. In comparison with other horizons, the surface layer in most soils has the best workability and the highest content of organic matter. Thus, it may be desirable to stockpile the surface layer for use in the final blanketing of the fill.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good

performance and very low maintenance can be expected of a properly designed and installed system. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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Custom Soil Resource Report
Map—Catastrophic Mortality, Large Animal Disposal, Trench

82° 44' 23" W

82° 43' 58" W

29° 54' 52" N

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29° 54' 22" N

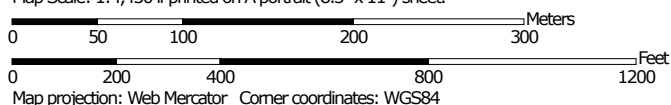
29° 54' 22" N

82° 44' 23" W

82° 43' 58" W



Map Scale: 1:4,430 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Background

 Aerial Photography

Soils

Soil Rating Polygons

 Very limited
 Somewhat limited
 Not limited
 Not rated or not available

Soil Rating Lines

 Very limited
 Somewhat limited
 Not limited
 Not rated or not available

Soil Rating Points

 Very limited
 Somewhat limited
 Not limited
 Not rated or not available

Water Features

 Streams and Canals

Transportation

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 Interstate Highways
 US Routes
 Major Roads
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MAP INFORMATION

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 Coordinate System: Web Mercator (EPSG:3857)

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Tables—Catastrophic Mortality, Large Animal Disposal, Trench

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Map Unit — Columbia County, Florida (FL023)						
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				Unstable excavation walls (1.00)		
				Seepage (0.50)		
			Chipley (8%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
			Blanton (8%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Albany (4%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
29	Lakeland fine sand, 0 to 5 percent slopes	Very limited	Lakeland (90%)	Seepage (1.00)	63.4	87.3%
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
			Blanton (3%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Alpin (3%)	Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Chipley (2%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		

Custom Soil Resource Report

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Map Unit — Columbia County, Florida (FL023)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Unstable excavation walls (1.00)		
30	Lakeland fine sand, 5 to 12 percent slopes	Very limited	Lakeland (90%)	Seepage (1.00)	1.8	2.5%
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Slope (0.04)		
			Alpin (4%)	Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
				Slope (0.04)		
			Blanton (3%)	Wetness (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
				Seepage (0.52)		
			Chipley (3%)	Wetness (1.00)		
				Seepage (1.00)		
				Too sandy (1.00)		
				Unstable excavation walls (1.00)		
Totals for Area of Interest					72.7	100.0%

Catastrophic Mortality, Large Animal Disposal, Trench— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	72.7	100.0%
Totals for Area of Interest	72.7	100.0%

Rating Options—Catastrophic Mortality, Large Animal Disposal, Trench

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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