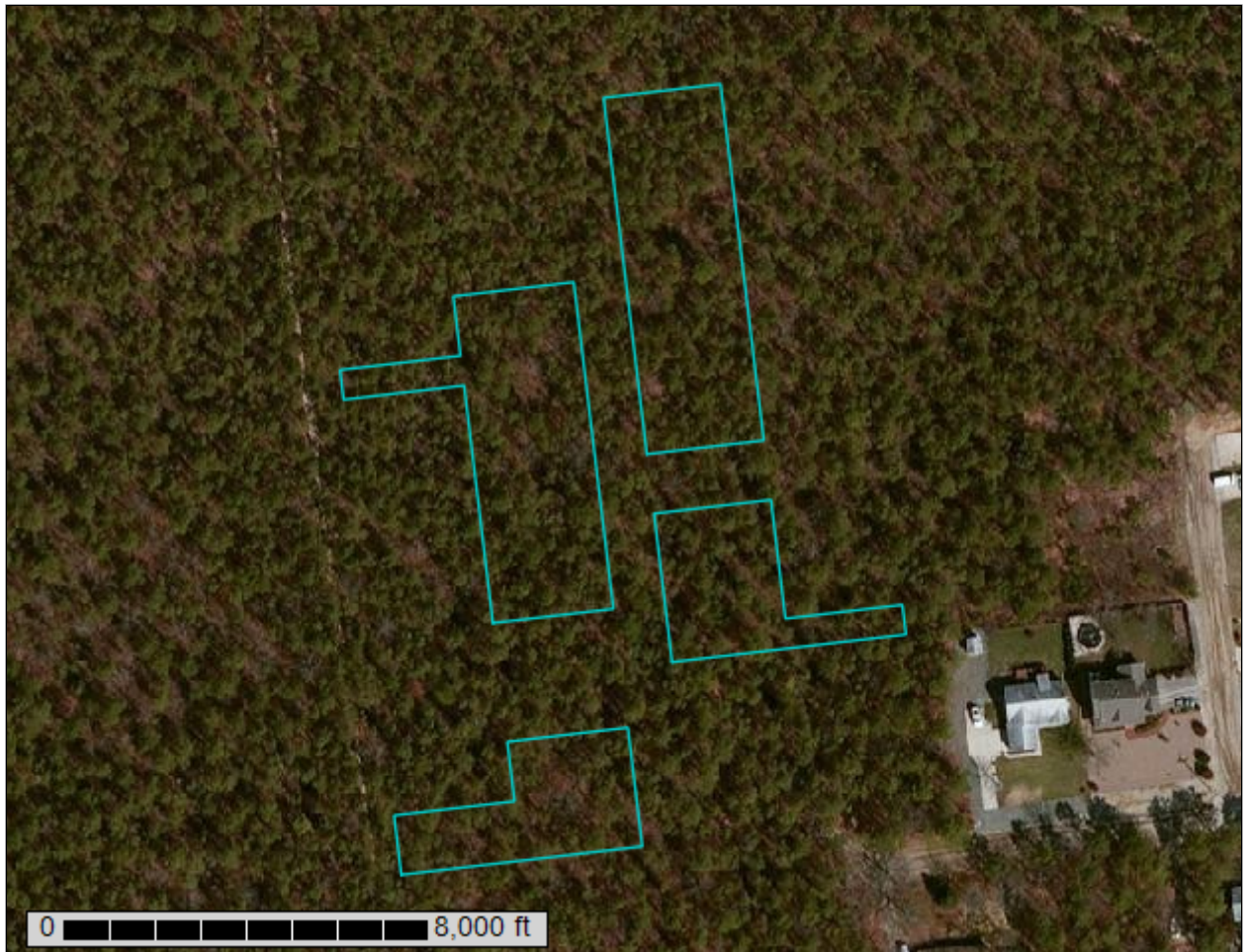


Custom Soil Resource Report for **Ocean County, New Jersey**



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

Custom Soil Resource Report

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.

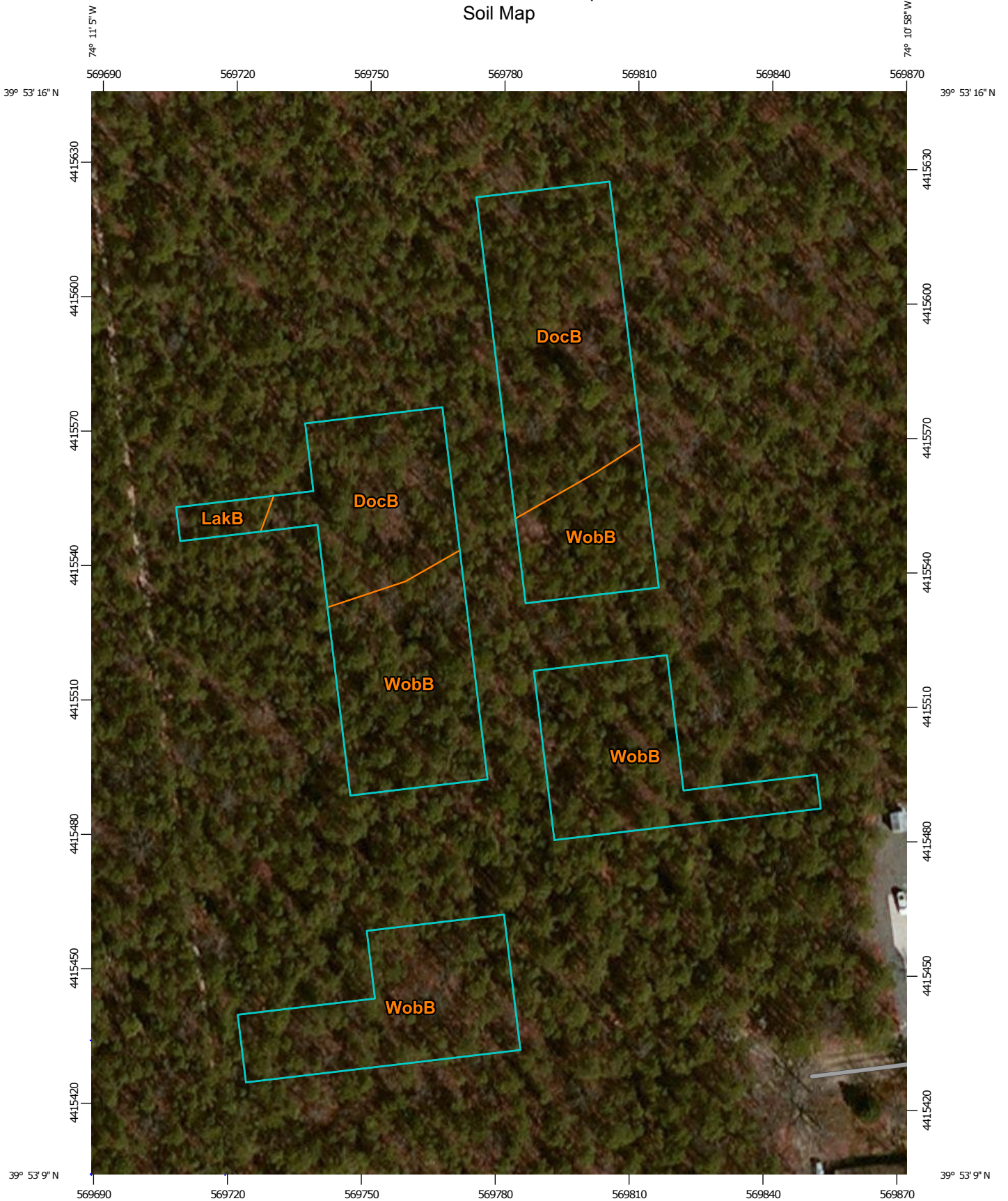
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.

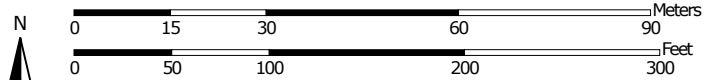
Soil Map

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




Map Scale: 1:1,180 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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 1:24,000.

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: Ocean County, New Jersey
 Survey Area Data: Version 11, Dec 21, 2013

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

Date(s) aerial images were photographed: Mar 19, 2011—Mar 26, 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

Ocean County, New Jersey (NJ029)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DocB	Downer loamy sand, 0 to 5 percent slopes	0.8	38.6%
LakB	Lakehurst sand, 0 to 5 percent slopes	0.0	1.8%
WobB	Woodmansie sand, 0 to 5 percent slopes	1.2	59.6%
Totals for Area of Interest		2.1	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

Custom Soil Resource Report

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.

Ocean County, New Jersey

DocB—Downer loamy sand, 0 to 5 percent slopes

Map Unit Setting

Elevation: 0 to 130 feet

Mean annual precipitation: 28 to 59 inches

Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Map Unit Composition

Downer and similar soils: 80 percent

Minor components: 20 percent

Description of Downer

Setting

Landform: Knolls, low hills

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Loamy fluviomarine deposits and/or gravelly fluviomarine deposits

Typical profile

Ap - 0 to 10 inches: slightly acid, loamy sand

BA - 10 to 16 inches: slightly acid, loamy sand

Bt - 16 to 36 inches: moderately acid, sandy loam

C1 - 36 to 48 inches: very strongly acid, loamy sand

C2 - 48 to 80 inches: very strongly acid, stratified sand to sandy loam

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Minor Components

Atsion

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Dip, tal

Down-slope shape: Linear

Across-slope shape: Linear

Evesboro

Percent of map unit: 5 percent
Landform: Low hills, dunes
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex

Mullica, rarely flooded

Percent of map unit: 5 percent
Landform: Depressions, flood plains, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

Hammonton

Percent of map unit: 5 percent
Landform: Depressions, flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

LakB—Lakehurst sand, 0 to 5 percent slopes

Map Unit Setting

Elevation: 20 to 150 feet
Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 161 to 231 days

Map Unit Composition

Lakehurst and similar soils: 85 percent
Minor components: 15 percent

Description of Lakehurst

Setting

Landform: Flats, dunes
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Sandy fluviomarine deposits

Typical profile

O_i - 0 to 2 inches: extremely acid, slightly decomposed plant material
A - 2 to 4 inches: extremely acid, sand
E - 4 to 18 inches: extremely acid, sand
B_h - 18 to 32 inches: very strongly acid, sand
BC - 32 to 45 inches: very strongly acid, sand
C - 45 to 54 inches: very strongly acid, sand

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Cg - 54 to 80 inches: very strongly acid, sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 19.98 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Farmland classification: Farmland of local importance

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A

Minor Components

Atsion, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions, flats

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Base slope, dip, talf

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Berryland, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions, drainageways, flats

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Quakerbridge

Percent of map unit: 5 percent

Landform: Knolls, flats

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex, linear

Across-slope shape: Linear

WobB—Woodmansie sand, 0 to 5 percent slopes

Map Unit Setting

Elevation: 10 to 150 feet

Mean annual precipitation: 28 to 59 inches

Mean annual air temperature: 46 to 79 degrees F

Frost-free period: 161 to 231 days

Map Unit Composition

Woodmansie and similar soils: 85 percent
Minor components: 15 percent

Description of Woodmansie

Setting

Landform: Ridges, interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Siliceous loamy marine deposits

Typical profile

A - 0 to 4 inches: extremely acid, sand
E - 4 to 10 inches: extremely acid, sand
Bh - 10 to 14 inches: extremely acid, sand
A' - 14 to 20 inches: extremely acid, sand
B' - 20 to 42 inches: very strongly acid, sandy clay loam
C - 42 to 60 inches: very strongly acid, stratified gravelly sand to sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: About 48 to 118 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.8 inches)

Interpretive groups

Farmland classification: Farmland of local importance
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B

Minor Components

Lakehurst

Percent of map unit: 5 percent
Landform: Depressions, flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

Lakewood

Percent of map unit: 5 percent
Landform: Knolls, flats
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Linear

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Downer

Percent of map unit: 3 percent

Landform: Knolls, low hills

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex, linear

Across-slope shape: Linear

Atsion, rarely flooded

Percent of map unit: 2 percent

Landform: Depressions, flats

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Base slope, dip, tal

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

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.

Sanitary Facilities

Sanitary Facilities interpretations are tools designed to guide the user in site selection for the safe disposal of sewage and solid waste. Example interpretations include septic tank absorption fields, sewage lagoons, and sanitary landfills.

Septic Tank Absorption Fields

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

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 the specified use. "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. "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,

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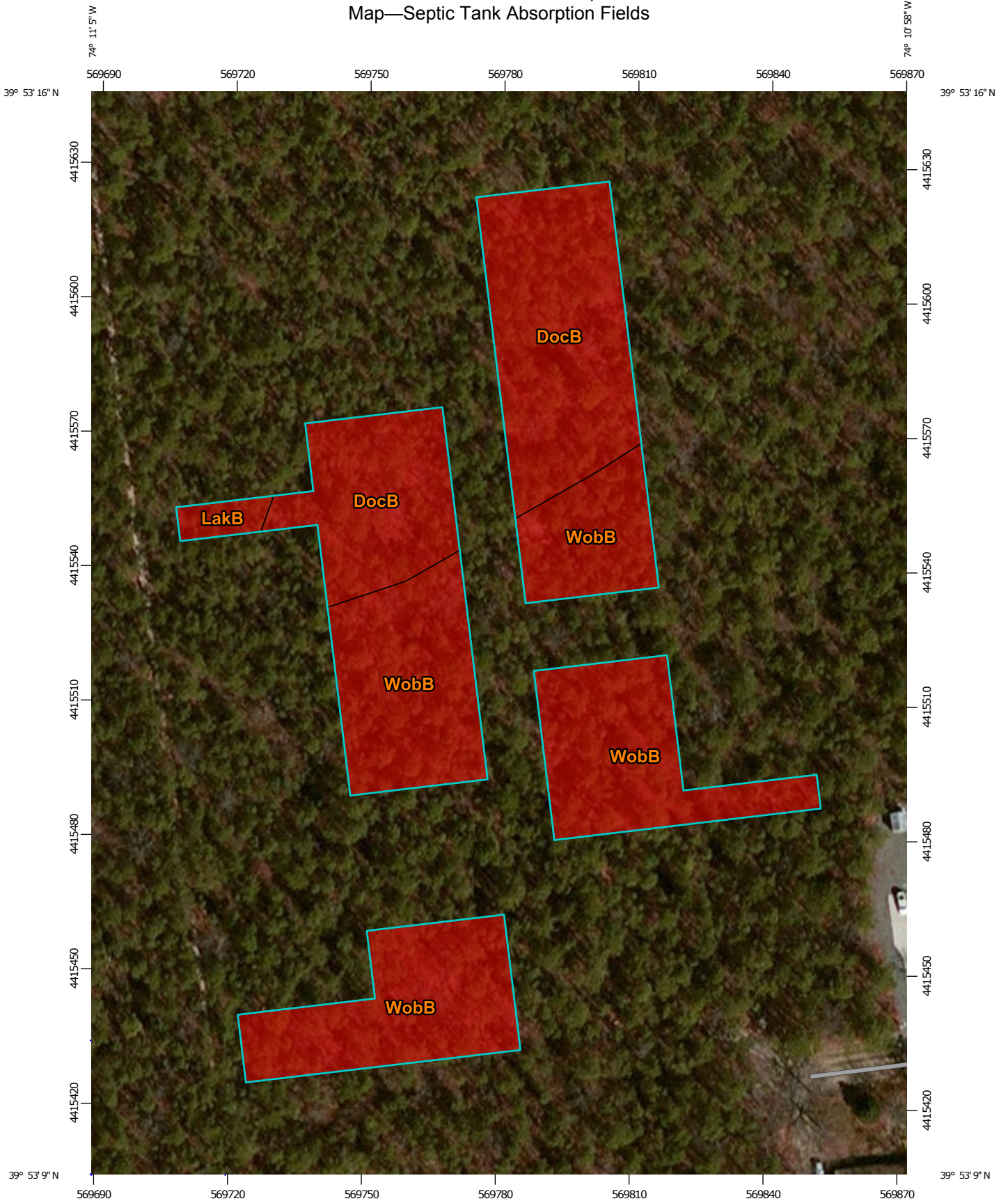
design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as 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).

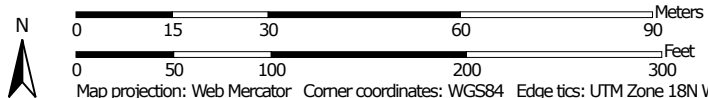
The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit 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.

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.

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Map—Septic Tank Absorption Fields























Map Scale: 1:1,180 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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**
 -  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.

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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: Ocean County, New Jersey
 Survey Area Data: Version 11, Dec 21, 2013

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

Date(s) aerial images were photographed: Mar 19, 2011—Mar 26, 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.

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Tables—Septic Tank Absorption Fields

Septic Tank Absorption Fields— Summary by Map Unit — Ocean County, New Jersey (NJ029)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DocB	Downer loamy sand, 0 to 5 percent slopes	Very limited	Downer (80%)	Seepage, bottom layer (1.00)	0.8	38.6%
			Hammonton (5%)	Depth to saturated zone (1.00)		
				Seepage, bottom layer (1.00)		
			Atsion (5%)	Depth to saturated zone (1.00)		
				Filtering capacity (1.00)		
				Seepage, bottom layer (1.00)		
			Evesboro (5%)	Seepage, bottom layer (1.00)		
				Filtering capacity (1.00)		
			Mullica, rarely flooded (5%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Seepage, bottom layer (1.00)		
				Flooding (0.40)		
			LakB	Lakehurst sand, 0 to 5 percent slopes		
Seepage, bottom layer (1.00)						
Filtering capacity (1.00)						
Quakerbridge (5%)	Seepage, bottom layer (1.00)					
	Filtering capacity (1.00)					
Atsion, rarely flooded (5%)	Depth to saturated zone (1.00)					
	Filtering capacity (1.00)					
	Seepage, bottom layer (1.00)					
	Flooding (0.40)					

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Septic Tank Absorption Fields— Summary by Map Unit — Ocean County, New Jersey (NJ029)								
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI		
			Berryland, rarely flooded (5%)	Ponding (1.00) Depth to saturated zone (1.00) Seepage, bottom layer (1.00) Filtering capacity (1.00) Flooding (0.40)				
WobB	Woodmansie sand, 0 to 5 percent slopes	Very limited	Woodmansie (85%)	Seepage, bottom layer (1.00)	1.2	59.6%		
			Lakehurst (5%)	Depth to saturated zone (1.00) Seepage, bottom layer (1.00) Filtering capacity (1.00)				
			Lakewood (5%)	Filtering capacity (1.00) Seepage, bottom layer (1.00)				
			Downer (3%)	Seepage, bottom layer (1.00)				
			Atsion, rarely flooded (2%)	Depth to saturated zone (1.00) Filtering capacity (1.00) Seepage, bottom layer (1.00) Flooding (0.40)				
Totals for Area of Interest							2.1	100.0%

Septic Tank Absorption Fields— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	2.1	100.0%
Totals for Area of Interest	2.1	100.0%

Rating Options—Septic Tank Absorption Fields

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Sewage Disposal (NJ)

A disposal field is an area where the sanitary sewage is discharged into the ground to treat the sewage in a manner that will retain most of the suspended solids in a septic tank and to discharge the effluent to the disposal field. The soil is evaluated from the surface to a depth of 203 cm, or 80 inches. The ratings are based on the soil properties that affect absorption of the effluent, construction, and pollution of ground and surface water. The depth to saturation (apparent and perched water table), permeability, cemented horizon and substratum, and the percentage of rock fragments affect the absorption and treatment of the effluent. Fractured and massive bedrock interferes with installation and absorption of the effluent.

Depth to a zone of saturation has a major influence on the suitability of the soil for a septic system because of public health concerns. A high water table restricts the ability of the system to remove pathogens, nutrients, and other waste components.

Massive bedrock and hydraulically restrictive or slowly permeable horizons or substrata can slow downward movement of sewage effluent. The effluent can build up, or "mound," causing prolonged saturated conditions. Lateral seepage of untreated or minimally treated effluent may result, creating a greater risk of surface water contamination..

Very rapid permeability associated with fractured bedrock or excessively coarse horizons or substrata may not provide adequate filtering capability for effective treatment of effluent, resulting in ground-water contamination..

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. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as 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).

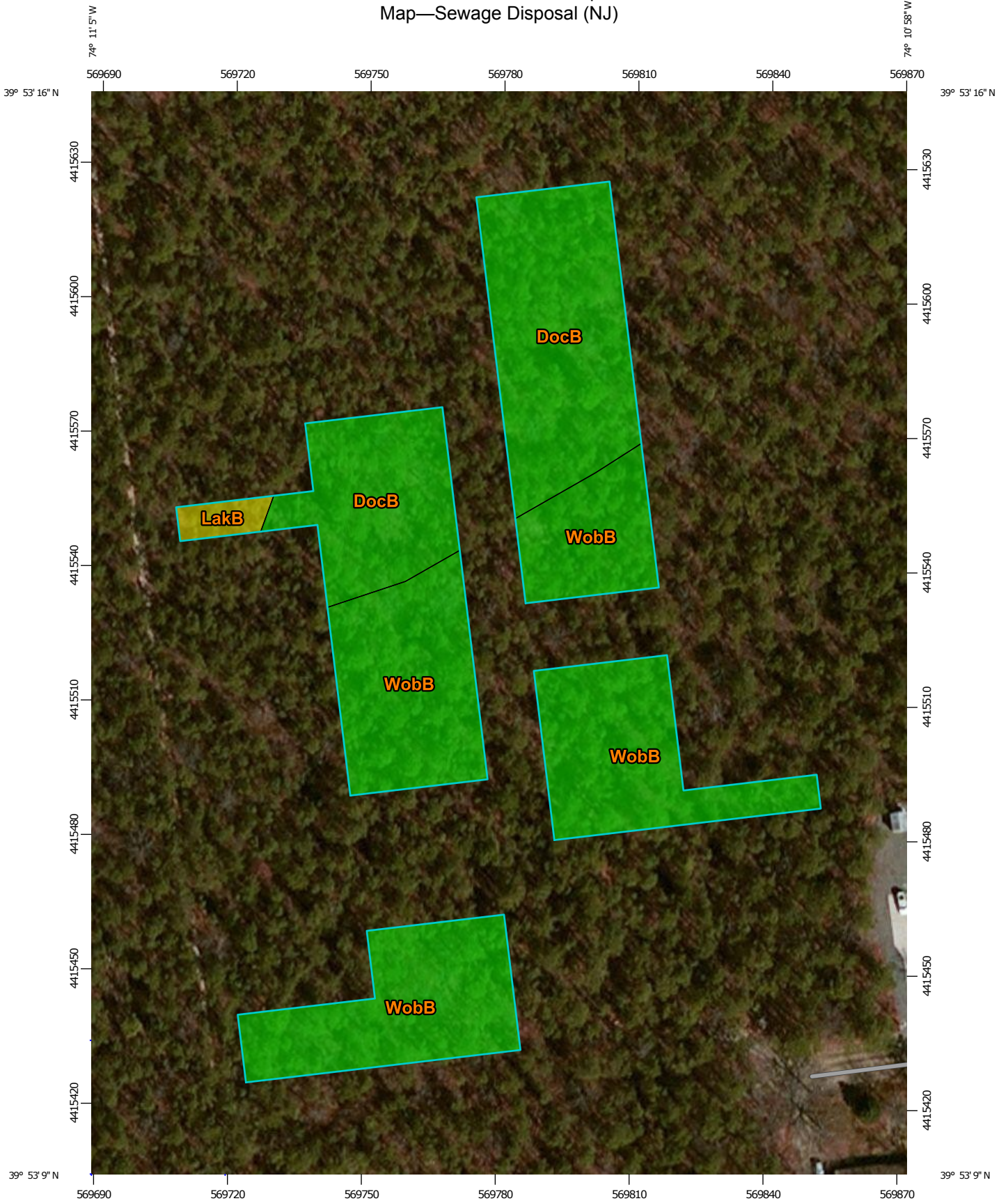
The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The 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.

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

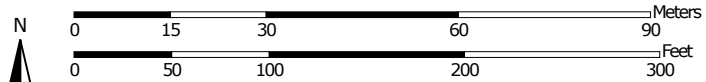
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generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

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Map—Sewage Disposal (NJ)























Map Scale: 1:1,180 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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**
 -  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: Ocean County, New Jersey
 Survey Area Data: Version 11, Dec 21, 2013

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

Date(s) aerial images were photographed: Mar 19, 2011—Mar 26, 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—Sewage Disposal (NJ)

Sewage Disposal (NJ)— Summary by Map Unit — Ocean County, New Jersey (NJ029)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DocB	Downer loamy sand, 0 to 5 percent slopes	Not limited	Downer (80%)		0.8	38.6%
			Evesboro (5%)			
LakB	Lakehurst sand, 0 to 5 percent slopes	Somewhat limited	Lakehurst (85%)	Depth to apparent zone of saturation (0.84)	0.0	1.8%
WobB	Woodmansie sand, 0 to 5 percent slopes	Not limited	Woodmansie (85%)		1.2	59.6%
			Lakewood (5%)			
			Downer (3%)			
Totals for Area of Interest					2.1	100.0%

Sewage Disposal (NJ)— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Not limited	2.0	98.2%
Somewhat limited	0.0	1.8%
Totals for Area of Interest	2.1	100.0%

Rating Options—Sewage Disposal (NJ)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Sanitary Facilities

This folder contains a collection of tabular reports that present soil interpretations related to sanitary facilities. The reports (tables) include all selected map units and components for each map unit, limiting features and interpretive ratings. Sanitary facilities interpretations are tools designed to guide the user in site selection for the safe disposal of sewage and solid waste. Example interpretations include septic tank absorption fields, sewage lagoons, and sanitary landfills.

Sewage Disposal (NJ)

The technical criteria used to generate this table are in “Standards for Individual Subsurface Sewerage Disposal Services, Subchapter 10. Disposal Fields,” in the State of New Jersey Administrative Code N.J.A.C.7:9A. These disposal systems serve a single family home, single building, or commercial unit on the same property where the total daily volume of sewage is less than 2,000 gallons. The table evaluates limiting soil features within the upper 10 feet of the soil and assigns the appropriate recommended type of disposal field system(s) permitted and the overall suitability class.

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. “Somewhat limited” indicates that the soil has features that are moderately favorable for the specified use. “Very limited” indicates that the soil has one or more features that are unfavorable for the specified use.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as 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).

A disposal field is an area where the sanitary sewage is discharged into the ground to treat the sewage in a manner that will retain most of the suspended solids in a septic tank and to discharge the effluent to the disposal field. The soil is evaluated from the surface to a depth of 300 centimeters, or approximately 10 feet. The ratings are based on the soil properties that affect absorption of the effluent, construction, and pollution of ground and surface water. Zone of saturation (apparent and perched water table), permeability, cemented horizon and substratum, and the percentage of rock

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fragments affect the absorption and treatment of the effluent. Fractured and massive bedrock interferes with installation and absorption of the effluent.

Depth to a zone of saturation has a major influence on the suitability of the soil for a septic system because of public health concerns. A high water table restricts the ability of the system to remove pathogens, nutrients, and other waste components.

Massive bedrock and a hydraulically restrictive substratum or horizon can affect excavation and result in lateral seepage of the effluent. The slow permeability impedes effluent infiltration, increasing the risk of surface-water pollution.

Very rapid permeability caused by fractured bedrock and/or an excessively coarse textured substratum or horizon may result in inadequate filtering of the effluent and thus in ground-water contamination.

Following is a description of the soil suitability class codes used in this table.

The term “water table” refers to the upper surface of a zone of saturation. The code “Wr” refers to a regional water table, and the code “Wp” refers to a perched water table.

The term “horizon” refers to a layer of soil or rock material in a soil boring or pit differing from the layers of soil above and below it in one or more soil morphological characteristics, including color, texture, content of rock fragments, structure, consistence, and redoximorphic features. The code “Hc” refers to an excessively coarse textured horizon, and the code “Hr” refers to a hydraulically restrictive horizon.

The term “substratum” refers to a layer of soil or rock material with an upper surface that is the deepest observed in the soil boring or pit. The lower extent of the layer is undetermined; the layer is assumed to extend through the required depth of evaluation (10 feet). The code “Sc” refers to an excessively coarse texture, and the code “Sr” refers to a hydraulically restrictive layer.

The following table summarizes the ratings for the limiting features:

Limiting features	Depth (ft)	Suitability class	Type of installation permitted
Zone of saturation, regional	<2	IIIW _r	Unsuitable
	2-5	IIW _r	M
	>5	I	C
Zone of saturation, perched	<2	IIIW _p	C
	2-5	IIW _p	C
	>5	I	C
Massive rock, hydraulically restrictive substratum	<4	IIIS _r	Unsuitable
	4-9	IIS _r	M
	>9	I	C
Hydraulically restrictive horizon, permeable substratum	<4	IIIH _r	SRB, SRE
	4-9	IIH _r	SRB, SRE, M
	>9	I	C
Excessively coarse horizon	0-5	IIHC	SRE, M
	>5	I	C

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Limiting features	Depth (ft)	Suitability class	Type of installation permitted
Fractured rock or excessively coarse substratum	0-5	IISc	SRE, M
	>5	I	C

The codes for the types of permitted disposal fields are as follows: *C*, conventional installation; *M*, mound installation; *SRB*, soil replacement, bottom-lined installation; and *SRE*, soil replacement, fill-enclosed installation.

Report—Sewage Disposal (NJ)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Sewage Disposal (NJ)—Ocean County, New Jersey							
Map symbol and soil name	Pct. of map unit	Disposal field (NJ)		Type permitted (NJ)		Suitability class (NJ)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DocB—Downer loamy sand, 0 to 5 percent slopes							
Downer	80	Not limited		C		I	
LakB—Lakehurst sand, 0 to 5 percent slopes							
Lakehurst	85	Somewhat limited		—		—	
		Depth to apparent zone of saturation	0.84	M	0.84	IIWr	0.84
WobB—Woodmansie sand, 0 to 5 percent slopes							
Woodmansie	85	Not limited		C		I	

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