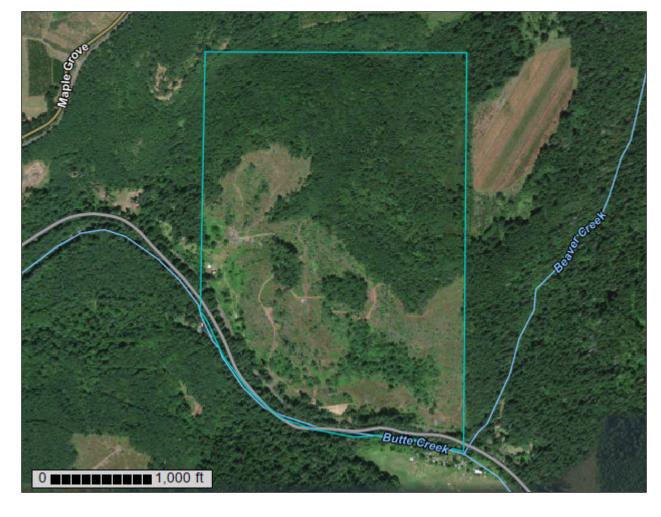


Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants Custom Soil Resource Report for Clackamas County Area, Oregon, and Marion County Area, Oregon



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 (https://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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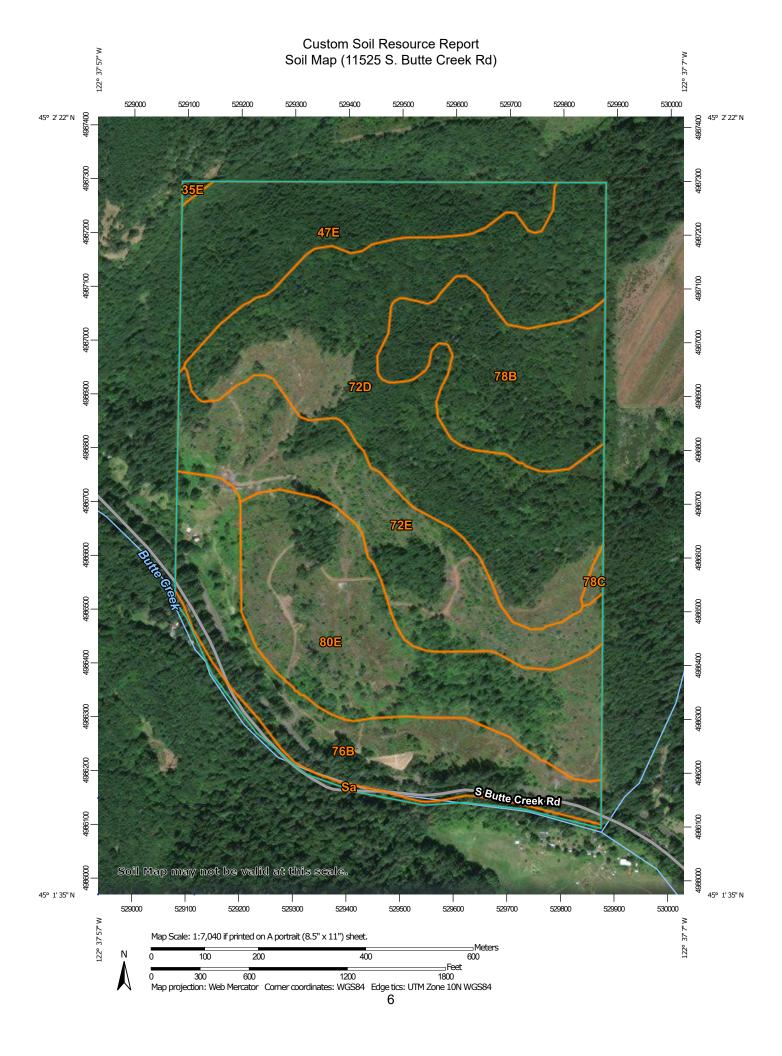
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Soil Map

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



MAP LEGEND

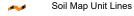
Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Points



Special Point Features

(o) 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

LLGLIAL

Spoil Area

Stony Spot

Nery Stony Spot

Wet Spot

△ Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

00

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Clackamas County Area, Oregon Survey Area Data: Version 16, Jun 11, 2020

Soil Survey Area: Marion County Area, Oregon Survey Area Data: Version 17. Jun 11. 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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MAP LEGEND	MAP INFORMATION	
	Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
	Date(s) aerial images were photographed: Sep 29, 2015—May 29, 2020	
	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 (11525 S. Butte Creek Rd)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	
35E	Gapcot gravelly loam, 30 to 60 percent slopes	0.3	0.1%	
47E	Kinney cobbly loam, 20 to 50 percent slopes	25.0	11.5%	
72D	Ritner cobbly silty clay loam, 5 to 30 percent slopes	63.2	29.2%	
72E	Ritner cobbly silty clay loam, 30 to 60 percent slopes	32.0	14.8%	
76B	Salem silt loam, 0 to 7 percent slopes	30.3	14.0%	
78B	Saum silt loam, 3 to 8 percent slopes	24.1	11.1%	
78C	Saum silt loam, 8 to 15 percent slopes	0.6	0.3%	
80E	Springwater loam, 30 to 60 percent slopes	38.7	17.9%	
Subtotals for Soil Survey A	rea	214.1	98.9%	
Totals for Area of Interest		216.4	100.0%	

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Sa	Salem gravelly silt loam	2.3	1.1%
Subtotals for Soil Survey Area		2.3	1.1%
Totals for Area of Interest		216.4	100.0%

Map Unit Descriptions (11525 S. Butte Creek Rd)

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

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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.

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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.

Clackamas County Area, Oregon

35E—Gapcot gravelly loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 224h Elevation: 500 to 1,800 feet

Mean annual precipitation: 50 to 60 inches Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 160 to 200 days

Farmland classification: Not prime farmland

Map Unit Composition

Gapcot and similar soils: 85 percent

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

Description of Gapcot

Setting

Landform: Hillslopes

Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Nose slope, side slope

Down-slope shape: Concave Across-slope shape: Concave

Parent material: Colluvium derived from sandstone

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 15 inches: gravelly clay loam
H3 - 15 to 25 inches: weathered bedrock

Properties and qualities

Slope: 30 to 60 percent

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

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D Hydric soil rating: No

47E—Kinney cobbly loam, 20 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2255 Elevation: 1,000 to 2,000 feet

Mean annual precipitation: 60 to 90 inches Mean annual air temperature: 46 to 50 degrees F

Frost-free period: 120 to 165 days

Farmland classification: Not prime farmland

Map Unit Composition

Kinney and similar soils: 80 percent

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

Description of Kinney

Setting

Landform: Hillslopes

Landform position (two-dimensional): Footslope, backslope Landform position (three-dimensional): Head slope, side slope

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Colluvium derived from tuff breccia

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

H1 - 1 to 20 inches: cobbly loam H2 - 20 to 42 inches: cobbly loam H3 - 42 to 60 inches: cobbly loam

Properties and qualities

Slope: 20 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B Hydric soil rating: No

72D—Ritner cobbly silty clay loam, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 226s Elevation: 300 to 1,800 feet

Mean annual precipitation: 45 to 60 inches Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 160 to 210 days

Farmland classification: Not prime farmland

Map Unit Composition

Ritner and similar soils: 85 percent

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

Description of Ritner

Setting

Landform: Hillslopes

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Crest, interfluve, nose slope

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Colluvium derived from basalt

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

H1 - 2 to 8 inches: cobbly silty clay loam
H2 - 8 to 28 inches: very cobbly silty clay loam
H3 - 28 to 32 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 30 percent

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

Drainage class: Well drained

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

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Forage suitability group: Well Drained > 15% Slopes (G002XY001OR)

Other vegetative classification: Well Drained > 15% Slopes (G002XY001OR)

72E—Ritner cobbly silty clay loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 226t Elevation: 300 to 1,800 feet

Mean annual precipitation: 40 to 60 inches Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 160 to 225 days

Farmland classification: Not prime farmland

Map Unit Composition

Ritner and similar soils: 85 percent

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

Description of Ritner

Setting

Landform: Hillslopes

Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Nose slope, side slope

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Colluvium derived from basalt

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

H1 - 2 to 8 inches: cobbly silty clay loam
H2 - 8 to 28 inches: very cobbly silty clay loam
H3 - 28 to 32 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 60 percent

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

Drainage class: Well drained

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

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C Hydric soil rating: No

76B—Salem silt loam, 0 to 7 percent slopes

Map Unit Setting

National map unit symbol: 226y Elevation: 200 to 650 feet

Mean annual precipitation: 40 to 60 inches Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Salem and similar soils: 85 percent

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

Description of Salem

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 24 inches: gravelly clay loam

H3 - 24 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 7 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of pondina: None

Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): 2s Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

78B—Saum silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2271 Elevation: 250 to 800 feet

Mean annual precipitation: 40 to 50 inches Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Saum and similar soils: 80 percent

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

Description of Saum

Setting

Landform: Hillslopes

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Material silty and colluvium

Typical profile

H1 - 0 to 8 inches: silt loam H2 - 8 to 26 inches: silty clay loam

H3 - 26 to 50 inches: gravelly silty clay loam H4 - 50 to 54 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent

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

Drainage class: Well drained

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

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)
Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

78C—Saum silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2272 Elevation: 250 to 800 feet

Mean annual precipitation: 40 to 50 inches Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Saum and similar soils: 80 percent

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

Description of Saum

Setting

Landform: Hillslopes

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Material silty and colluvium

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 26 inches: silty clay loam

H3 - 26 to 50 inches: gravelly silty clay loam H4 - 50 to 54 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent

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

Drainage class: Well drained

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

to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)
Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

80E—Springwater loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 227c Elevation: 500 to 1,800 feet

Mean annual precipitation: 50 to 60 inches Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 160 to 200 days

Farmland classification: Not prime farmland

Map Unit Composition

Springwater and similar soils: 85 percent

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

Description of Springwater

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Nose slope, side slope

Down-slope shape: Concave Across-slope shape: Concave

Parent material: Colluvium derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

H1 - 2 to 9 inches: loam H2 - 9 to 39 inches: clay loam

H3 - 39 to 49 inches: weathered bedrock

Properties and qualities

Slope: 30 to 60 percent

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

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C Hydric soil rating: No

Marion County Area, Oregon

Sa—Salem gravelly silt loam

Map Unit Setting

National map unit symbol: 24r5 Elevation: 100 to 600 feet

Mean annual precipitation: 40 to 45 inches Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 200 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Salem and similar soils: 90 percent

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

Description of Salem

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Gravelly mixed alluvium

Typical profile

H1 - 0 to 9 inches: gravelly silt loam H2 - 9 to 30 inches: gravelly clay loam H3 - 30 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 2s Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)

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