



NCRS MAP UNIT DESCRIPTION

FAWN 2833/2734

VERDAD



TOTAL ROAD SOIL DISTURBANCE ACREAGE	
OLNEY FINE SANDY LOAD (1-3% SLOPE) HYDROLIC SOIL GROUP B	0.06 ACRES
VONA LOAMY SAND (3-5% SLOPE) HYDROLIC SOIL GROUP A	0.13 ACRES
TOTAL OIL AND GAS DISTURBANCE ACREAGE	
OLNEY FINE SANDY LOAD (1-3% SLOPE) HYDROLIC SOIL GROUP B	0.21 ACRES
VONA LOAMY SAND (3-5% SLOPE) HYDROLIC SOIL GROUP A	8.87 ACRES
WELD LOAM (1-3% SLOPE) HYDROLIC SOIL GROUP C	0.92 ACRES

DATE:	02/01/22	DRAWN BY:	ARG	REVIEWED BY:	CCC	SCALE:	1" = 100'	SHEET:	1 OF 1	REVISION:	XXX	XXX	XXX
											XXXXXX	XXXXXX	XXXXXX

Map Unit Description

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 in this report, 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, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components 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. Some minor components, however, have properties and behavior 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*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given 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.

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

Weld County, Colorado, Southern Part

47—Olney fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 362v

Elevation: 4,600 to 5,200 feet

Mean annual precipitation: 11 to 15 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 125 to 175 days

Farmland classification: Prime farmland if irrigated and the product of
I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Olney and similar soils: 85 percent

Minor components: 15 percent

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

Description of Olney

Setting

Landform: Plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed deposit outwash

Typical profile

H1 - 0 to 10 inches: fine sandy loam

H2 - 10 to 20 inches: sandy clay loam

H3 - 20 to 25 inches: sandy clay loam

H4 - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0
mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.0
inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: No

Minor Components

Zigweid

Percent of map unit: 10 percent

Hydric soil rating: No

Vona

Percent of map unit: 5 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 19, Jun 5, 2020

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Weld County, Colorado, Southern Part

73—Vona loamy sand, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2x0j8

Elevation: 4,100 to 5,200 feet

Mean annual precipitation: 12 to 17 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 130 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Vona and similar soils: 85 percent

Minor components: 15 percent

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

Description of Vona

Setting

Landform: Hills, hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Eolian sands

Typical profile

A - 0 to 7 inches: loamy sand

Bt1 - 7 to 14 inches: sandy loam

Bt2 - 14 to 20 inches: sandy loam

Bk - 20 to 45 inches: sandy loam

C - 45 to 80 inches: loamy sand

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

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

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.1 to 1.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: R067BY015CO - Deep Sand

Hydric soil rating: No

Minor Components

Ascalon

Percent of map unit: 5 percent

Landform: Interfluves

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Manter

Percent of map unit: 5 percent
Landform: Hills, interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Oldest

Percent of map unit: 3 percent
Landform: Interfluves, hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Valent

Percent of map unit: 2 percent
Landform: Dunes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope, nose
slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Ecological site: R067BY015CO - Deep Sand
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 19, Jun 5, 2020

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Weld County, Colorado, Southern Part

79—Weld loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2x0hw

Elevation: 3,600 to 5,750 feet

Mean annual precipitation: 12 to 17 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 115 to 155 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Weld and similar soils: 80 percent

Minor components: 20 percent

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

Description of Weld

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Calcareous loess

Typical profile

Ap - 0 to 8 inches: loam

Bt1 - 8 to 12 inches: clay

Bt2 - 12 to 15 inches: clay loam

Btk - 15 to 28 inches: loam

Bk - 28 to 60 inches: silt loam

C - 60 to 80 inches: silt loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 14 percent

Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

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

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3c

Hydrologic Soil Group: C

Ecological site: R067BY002CO - Loamy Plains

Hydric soil rating: No

Minor Components

Adena

Percent of map unit: 8 percent

Landform: Interfluves

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Colby

Percent of map unit: 7 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Keith

Percent of map unit: 3 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Baca

Percent of map unit: 2 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 19, Jun 5, 2020

Weld County, Colorado, Southern Part

3—Aquolls and Aquepts, gravelly substratum

Map Unit Setting

National map unit symbol: 3627

Elevation: 4,000 to 7,200 feet

Mean annual precipitation: 12 to 18 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 80 to 155 days

Farmland classification: Prime farmland if drained and either
protected from flooding or not frequently flooded during the
growing season

Map Unit Composition

Aquolls and similar soils: 55 percent

Aquepts, gravelly substratum, and similar soils: 30 percent

Minor components: 15 percent

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

Description of Aquolls

Setting

Landform: Swales, streams, flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Recent alluvium

Typical profile

H1 - 0 to 48 inches: loam

H2 - 48 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 6 to 48 inches

Frequency of flooding: FrequentNone

Frequency of ponding: None

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0
mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.0
inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6w

Hydrologic Soil Group: D

Ecological site: R067BY035CO - Salt Meadow
Hydric soil rating: Yes

Description of Aquepts, Gravelly Substratum

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Recent alluvium

Typical profile

H1 - 0 to 48 inches: variable
H2 - 48 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water
(Ksat): Moderately high to very high (0.57 to 19.98 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0
mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6
inches)

Interpretive groups

Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: D
Ecological site: R067BY035CO - Salt Meadow
Hydric soil rating: Yes

Minor Components

Bankard

Percent of map unit: 10 percent
Hydric soil rating: No

Ustic torrifluvents

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

Weld County, Colorado, Southern Part

45—Olney loamy sand, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 362s

Elevation: 4,600 to 5,200 feet

Mean annual precipitation: 11 to 15 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 125 to 175 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Olney and similar soils: 85 percent

Minor components: 15 percent

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

Description of Olney

Setting

Landform: Plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed deposit outwash

Typical profile

H1 - 0 to 10 inches: loamy sand

H2 - 10 to 20 inches: sandy clay loam

H3 - 20 to 25 inches: sandy clay loam

H4 - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: No

Minor Components

Zigweid

Percent of map unit: 8 percent

Hydric soil rating: No

Vona

Percent of map unit: 7 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part

Survey Area Data: Version 20, Aug 31, 2021