PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 21 2016

Describer: Andy Steinert

NEON Plot ID: CPER_002

Site ID: S2016CO123001

Pedon ID: S2016CO123001

Site Note: NEON Sample Site: CPER_002

Pedon Note: The soil is mapped as the Terry sandy loam; 3-9% slopes. The intent was to sample the Terry component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; and no bedrock within 1 meter of the soil surface; this soil correltes to the Ascalon series.

Lab Source ID: KSSL

Lab Pedon #: 16N0625

Soil Name as Described/Sampled: Ascalon

Classification: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on footslope of base slope of hill

Upslope Shape: concave

Cross Slope Shape: linear

Particle Size Control Section: 12 to 62 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 27 cm.
argillic horizon 12 to 81 cm.
secondary carbonates 81 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 65 -- Terry sandy loam, 3 to 9 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8110278

Std Longitude: -104.7294722

Latitude: 40 degrees 48 minutes 39.70 seconds north

Longitude: 104 degrees 43 minutes 46.10 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 522817 meters

UTM Northing: 4517816 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, broom snakeweed, plains pricklypear, sand dropseed, spreading buckwheat, threeawn, xanthoparmelia lichen

Parent Material: eolian deposits

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123001 **Pedon ID:** S2016CO123001

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
3.0	1,650.5	180						well		

A--0 to 12 centimeters (0.0 to 4.7 inches); dark brown (10YR 3/3) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 47 percent sand; 44 percent silt; 9 percent clay; weak fine granular structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.2, pH indicator solutions; clear smooth boundary. Lab sample # 16N02693

Bt1--12 to 27 centimeters (4.7 to 10.6 inches); dark brown (10YR 3/3) broken face sandy clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 52 percent sand; 20 percent silt; 28 percent clay; moderate medium prismatic parts to moderate medium angular blocky, and moderate fine prismatic parts to moderate fine angular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular and few fine vesicular pores; 20 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.4, pH indicator solutions; clear wavy boundary. Lab sample # 16N02694

Bt2--27 to 56 centimeters (10.6 to 22.0 inches); dark yellowish brown (10YR 4/4) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 55 percent sand; 20 percent silt; 25 percent clay; moderate coarse prismatic parts to moderate coarse subangular blocky, and moderate medium prismatic parts to moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, moderately plastic; common very fine roots throughout and few fine roots throughout; few very fine vesicular and few fine vesicular pores; 15 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 6.7, pH indicator solutions; clear wavy boundary. Lab sample # 16N02695

Bt3--56 to 81 centimeters (22.0 to 31.9 inches); dark yellowish brown (10YR 4/4) broken face sandy loam, brown (10YR 4/3) broken face, moist; 75 percent sand; 12 percent silt; 13 percent clay; weak coarse prismatic parts to moderate coarse subangular blocky, and weak medium prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; few very fine vesicular and common fine vesicular pores; 5 percent faint clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.4, pH indicator solutions; clear wavy boundary. Lab sample # 16N02696

Bk--81 to 100 centimeters (31.9 to 39.4 inches); brown (10YR 5/3) broken face sandy loam, brown (10YR 4/3) broken face, moist; 79 percent sand; 12 percent silt; 9 percent clay; moderate coarse subangular blocky, and moderate medium subangular blocky, and moderate coarse prismatic structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; few very fine vesicular and common fine vesicular pores; 2 percent fine threadlike carbonate masses on faces of peds; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 16N02697

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 16 2016
Describer: Mike Moore
NEON Plot ID: CPER_013
Site ID: S2016CO123002

Pedon ID: S2016CO123002

Site Note: NEON Sample Site: CPER_013

Pedon Note: The soil is mapped as the Haveron loam; 0-3% slopes. The intent was to sample the Haverson component in this map unit. The soil pit was described having an ochric epipedon; a cambic horizon; and had secondary carbonates; this soil is a more developed soil than the Haverson series.

Lab Source ID: KSSL
Lab Pedon #: 16N0626
Soil Name as Described/Sampled: Haverson
Classification: Fine-loamy, mixed, superactive, mesic Torrifluventic Haplustepts
Soil Name as Correlated:

Classification:
Pedon Type: taxadjunct to the series
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on tread of terrace
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: ochric epipedon 0 to 19 cm.
cambic horizon 19 to 100 cm.
secondary carbonates 19 to 100 cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 29 -- Haverson loam, 0 to 3 percent slopes
Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8218528
Std Longitude: -104.7130556

Latitude: 40 degrees 49 minutes 18.67 seconds north
Longitude: 104 degrees 42 minutes 47.00 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 524197 meters
UTM Northing: 4519021 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: blue grama, buffalograss, fourwing saltbush, plains pricklypear
Parent Material: alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2016CO123002 **Pedon ID:** S2016CO123002

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0	1,627.0	220						well		

A--0 to 19 centimeters (0.0 to 7.5 inches); brown (10YR 5/3) broken face silty clay loam, brown (10YR 4/3) broken face, moist; 15 percent sand; 52 percent silt; 33 percent clay; weak fine granular, and moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; very fine roots and fine roots; very fine and fine pores; carbonate, finely disseminated throughout; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 7.9, pH meter; clear smooth boundary. Lab sample # 16N02698

Bkb1--19 to 45 centimeters (7.5 to 17.7 inches); dark grayish brown (10YR 4/2) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 33 percent sand; 33 percent silt; 34 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; fine roots; fine pores; 1 percent fine irregular carbonate masses in matrix; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; clear smooth boundary. Lab sample # 16N02699

Bkb2--45 to 68 centimeters (17.7 to 26.8 inches); very dark grayish brown (10YR 3/2) broken face clay loam, very dark gray (10YR 3/1) broken face, moist; 23 percent sand; 44 percent silt; 33 percent clay; weak medium prismatic parts to weak medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; fine roots; medium pores; 1 percent very fine spherical carbonate masses in matrix; nonflat rounded indurated 75 to 250-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; clear wavy boundary. Lab sample # 16N02700

Bkb3--68 to 100 centimeters (26.8 to 39.4 inches); brown (10YR 5/3) broken face loam, dark brown (10YR 3/3) broken face, moist; 45 percent sand; 37 percent silt; 18 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, nonsticky, slightly plastic; fine roots; fine pores; 3 percent fine irregular carbonate masses in matrix; nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter. Lab sample # 16N02701

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 16 2016
Describer: Andy Steinert
NEON Plot ID: CPER_018
Site ID: S2016CO123003

Pedon ID: S2016CO123003

Site Note: NEON Sample Site: CPER_018

Pedon Note: The soil is mapped as the Vona sandy loam; 0-3% slopes. The intent was to sample the Vona component in this map unit. The soil pit was described having an mollic epipedon that is pachic; an argillic horizon; an abrupt textural change; and had secondary carbonates; this soil correlates to the Haxtun series rather than the Vona series. Haxtun is often times found with the Vona soils.

Lab Source ID: KSSL
Lab Pedon #: 16N0627
Soil Name as Described/Sampled: Haxtun
Classification: Fine-loamy, mixed, superactive, mesic Pachic Argiustolls

Soil Name as Correlated:

Classification:
Pedon Type: correlates to named soil
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: plain
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 15 to 65 cm.
Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 72 cm.
argillic horizon 15 to 83 cm.
secondary carbonates 72 to 83 cm.
abrupt textural change 83 to cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 73 -- Vona sandy loam, 0 to 3 percent slopes
Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8255833
Std Longitude: -104.6952778

Latitude: 40 degrees 49 minutes 32.10 seconds north
Longitude: 104 degrees 41 minutes 43.00 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 525695 meters
UTM Northing: 4519440 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: blue grama, needle and thread, plains pricklypear, sand dropseed, spreading buckwheat, threeawn
Parent Material: eolian deposits over old alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Top Depth (cm)	Bottom Depth (cm)	Restriction Kind	Restriction Hardness
83		abrupt textural change	

Cont. Site ID: S2016CO123003 **Pedon ID:** S2016CO123003

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.5	1,633.0	135						well		

A--0 to 15 centimeters (0.0 to 5.9 inches); dark grayish brown (10YR 4/2) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 75 percent sand; 15 percent silt; 10 percent clay; weak fine granular, and weak medium subangular blocky, and weak coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout and few coarse roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout; 3 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH indicator solutions; abrupt smooth boundary. Lab sample # 16N02702

Bt1--15 to 40 centimeters (5.9 to 15.7 inches); brown (10YR 4/3) broken face sandy loam, dark brown (10YR 3/3) broken face, moist; 72 percent sand; 14 percent silt; 14 percent clay; moderate coarse subangular blocky, and weak medium prismatic parts to moderate medium subangular blocky structure; moderately hard, friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout and few coarse roots throughout; common very fine vesicular pores; 5 percent faint clay films on vertical faces of peds and 10 percent faint clay bridges on all faces of peds; 1 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH indicator solutions; gradual wavy boundary. Lab sample # 16N02703

Bt2--40 to 72 centimeters (15.7 to 28.3 inches); very dark grayish brown (10YR 3/2) broken face sandy clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 60 percent sand; 8 percent silt; 32 percent clay; strong medium prismatic parts to strong medium angular blocky, and strong coarse prismatic parts to strong coarse angular blocky structure; extremely hard, friable, moderately sticky, moderately plastic; common very fine roots throughout and common fine roots throughout and few coarse roots throughout; common very fine vesicular and few fine vesicular pores; 45 percent prominent clay films on all faces of peds; 2 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.3, pH indicator solutions; clear wavy boundary. Lab sample # 16N02704

Btk--72 to 83 centimeters (28.3 to 32.7 inches); pale brown (10YR 6/3) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 60 percent sand; 11 percent silt; 29 percent clay; moderate medium prismatic parts to moderate medium angular blocky, and moderate coarse prismatic parts to moderate coarse angular blocky structure; very hard, friable, moderately sticky, slightly plastic; common very fine roots throughout and common fine roots throughout and few coarse roots throughout; common very fine tubular and common fine tubular pores; 10 percent distinct clay films on vertical faces of peds; 1 percent fine threadlike carbonate masses on faces of peds and 2 percent medium irregular carbonate masses on faces of peds; 12 percent nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear wavy boundary. Lab sample # 16N02705

2C--83 to 100 centimeters (32.7 to 39.4 inches); brown (10YR 5/3) broken face extremely gravelly loamy sand, brown (10YR 4/3) broken face, moist; 85 percent sand; 11 percent silt; 4 percent clay; single grain; loose, loose, nonsticky, nonplastic; few very fine roots throughout; 5 percent coarse irregular carbonate concretions on bottom of rock fragments and 5 percent medium irregular carbonate concretions on bottom of rock fragments; 4 percent nonflat rounded indurated 76 to 250-millimeter Mixed rock fragments and 35 percent nonflat rounded indurated 21 to 75-millimeter Mixed rock fragments and 40 percent nonflat rounded indurated 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 16N02706

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 21 2016

Describer: Andy Steinert

NEON Plot ID: CPER_022

Site ID: S2016CO123004

Pedon ID: S2016CO123004

Site Note: NEON Sample Site: CPER_022

Pedon Note: The soil is mapped as the Ascalon fine sandy loam; 0-6% slopes. The intent was to sample the Ascalon component in this map unit. The soil pit was described having an mollic epipedon; an argillic horizon; and had secondary carbonates; this soil correlates to the Ascalon series.

Lab Source ID: KSSL

Lab Pedon #: 16N0628

Soil Name as Described/Sampled: Ascalon

Classification: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: plain

Upslope Shape: convex

Cross Slope Shape: linear

Particle Size Control Section: 14 to 37 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 14 cm.
argillic horizon 14 to 37 cm.
secondary carbonates 37 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 4 -- Ascalon fine sandy loam, 0 to 6 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8423333

Std Longitude: -104.6981389

Latitude: 40 degrees 50 minutes 32.40 seconds north

Longitude: 104 degrees 41 minutes 53.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 525448 meters

UTM Northing: 4521298 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, plains pricklypear, sand dropseed, spreading buckwheat, threeawn, western wheatgrass

Parent Material: eolian deposits

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123004 **Pedon ID:** S2016CO123004

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
2.0	1,649.0	25						well		

A--0 to 14 centimeters (0.0 to 5.5 inches); dark grayish brown (10YR 4/2) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 55 percent sand; 29 percent silt; 16 percent clay; weak fine granular, and weak medium subangular blocky, and weak fine subangular blocky structure; soft, firm, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH indicator solutions. Lab sample # 16N02707

Bt--14 to 37 centimeters (5.5 to 14.6 inches); brown (10YR 4/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 53 percent sand; 23 percent silt; 24 percent clay; weak medium prismatic parts to moderate medium subangular blocky, and weak coarse prismatic parts to moderate coarse subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular pores; 15 percent faint clay films on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.4, pH indicator solutions. Lab sample # 16N02708

Bk1--37 to 79 centimeters (14.6 to 31.1 inches); very pale brown (10YR 7/3) broken face sandy clay loam, pale brown (10YR 6/3) broken face, moist; 53 percent sand; 23 percent silt; 24 percent clay; weak coarse prismatic parts to moderate coarse subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; common very fine tubular and common fine tubular pores; 3 percent fine irregular carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions. Lab sample # 16N02709

Bk2--79 to 100 centimeters (31.1 to 39.4 inches); pale brown (10YR 6/3) broken face sandy loam, brown (10YR 5/3) broken face, moist; 75 percent sand; 10 percent silt; 15 percent clay; weak medium subangular blocky, and weak coarse subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; few very fine tubular and few fine tubular pores; 2 percent fine irregular carbonate masses in matrix; 2 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.3, pH indicator solutions. Lab sample # 16N02710

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 21 2016
Describer: Andy Steinert
NEON Plot ID: CPER_001
Site ID: S2016CO123005

Pedon ID: S2016CO123005
Site Note: NEON Sample Site: CPER_001
Pedon Note: The soil is mapped as Avar fine sandy loam. The intent was to sample the Avar component in this map unit. The soil pit was described having an mollic epipedon; an argillic horizon; a coarse-loamy particle size control section; and had salt accumulations; this similar to the Avar series; except Avar has a fine-loamy particle size control section and has a natric horizon.

Lab Source ID: KSSL
Lab Pedon #: 16N0629
Soil Name as Described/Sampled: Avar
Classification: Coarse-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:
Pedon Type: taxadjunct to the series
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on tread of old terrace
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 13 to 37 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 37 cm.
argillic horizon 13 to 37 cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 9 -- Avar fine sandy loam
Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8507222
Std Longitude: -104.6994167

Latitude: 40 degrees 51 minutes 2.60 seconds north
Longitude: 104 degrees 41 minutes 57.90 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 525336 meters
UTM Northing: 4522230 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: alkali sacaton, blue grama, fourwing saltbush, plains pricklypear, saltgrass, western wheatgrass
Parent Material: alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2016CO123005 **Pedon ID:** S2016CO123005

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.5	1,643.5	0						well		

A--0 to 13 centimeters (0.0 to 5.1 inches); brown (10YR 5/3) broken face loamy coarse sand, very dark grayish brown (10YR 3/2) broken face, moist; 85 percent sand; 6 percent silt; 9 percent clay; weak fine granular, and weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout and common coarse roots throughout; noneffervescent, by HCl, 1 normal; neutral, pH 6.8, pH indicator solutions; texture high in coarse sand; clear smooth boundary. Lab sample # 16N02711

Bt--13 to 37 centimeters (5.1 to 14.6 inches); dark grayish brown (10YR 4/2) broken face coarse sandy loam, very dark brown (10YR 2/2) broken face, moist; 80 percent sand; 5 percent silt; 15 percent clay; moderate medium prismatic parts to moderate coarse subangular blocky, and moderate medium prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; common very fine roots throughout and common fine roots throughout and common coarse roots throughout; few very fine vesicular pores; 10 percent distinct clay bridges on all faces of peds and 15 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions; gradual wavy boundary. Lab sample # 16N02712

2Bz1--37 to 58 centimeters (14.6 to 22.8 inches); yellowish brown (10YR 5/4) broken face clay loam, brown (10YR 4/3) broken face, moist; 35 percent sand; 33 percent silt; 32 percent clay; weak coarse prismatic, and moderate coarse subangular blocky, and moderate medium subangular blocky structure; slightly hard, friable, very sticky, moderately plastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 7 percent fine threadlike salt crystals in matrix; violent effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions; gradual wavy boundary. Lab sample # 16N02713

2Bz2--58 to 100 centimeters (22.8 to 39.4 inches); pale brown (10YR 6/3) broken face silty clay loam, brown (10YR 5/3) broken face, moist; 15 percent sand; 53 percent silt; 32 percent clay; moderate medium subangular blocky, and moderate coarse subangular blocky structure; hard, firm, very sticky, moderately plastic; common very fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike salt crystals in matrix; violent effervescence, by HCl, 1 normal; very strongly alkaline, pH 9.6, pH indicator solutions. Lab sample # 16N02714

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 22 2016
Describer: Andy Steinert
NEON Plot ID: CPER_017
Site ID: S2016CO123006

Pedon ID: S2016CO123006
Site Note: NEON Sample Site: CPER_017
Pedon Note: The soil is mapped as Nunn loam; 0-6% slopes. The intent was to sample the Nunn component in this map unit. The soil pit was described having an mollic epipedon; an argillic horizon; a fine-loamy particle size control section; and had a calcic horizon. The Nunn soil has a fine particle size control section and does not have a calcic horizon. The Wapiti series was the best fit.
Lab Source ID: KSSL
Lab Pedon #: 16N0630
Soil Name as Described/Sampled: Wapiti
Classification: Fine-loamy, mixed, superactive, mesic Calcidic Argiustolls

Soil Name as Correlated:

Classification:
Pedon Type: correlates to named soil
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: playa slope
Upslope Shape: convex
Cross Slope Shape: linear
Particle Size Control Section: 23 to 31 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 23 cm.
argillic horizon 23 to 31 cm.
secondary carbonates 31 to 100 cm.
calcic horizon 31 to 100 cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 40 -- Nunn loam, 0 to 6 percent slopes
Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8564167
Std Longitude: -104.6915556

Latitude: 40 degrees 51 minutes 23.10 seconds north
Longitude: 104 degrees 41 minutes 29.60 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 525996 meters
UTM Northing: 4522864 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: blue grama, fourwing saltbush, needle and thread, threeawn, xanthoparmelia lichen
Parent Material: eolian deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2016CO123006 **Pedon ID:** S2016CO123006

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
3.0	1,641.3	60						well		

A--0 to 23 centimeters (0.0 to 9.1 inches); brown (10YR 5/3) broken face sandy clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 55 percent sand; 22 percent silt; 23 percent clay; weak fine subangular blocky, and weak medium subangular blocky, and weak fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout and few fine roots throughout and few coarse roots throughout; carbonate, finely disseminated throughout; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions; clear smooth boundary. Lab sample # 16N02715

Bt--23 to 31 centimeters (9.1 to 12.2 inches); pale brown (10YR 6/3) broken face sandy clay loam, dark grayish brown (10YR 4/2) broken face, moist; 50 percent sand; 17 percent silt; 33 percent clay; weak medium prismatic, and moderate medium subangular blocky, and moderate coarse subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots throughout and few fine roots throughout; few very fine vesicular and few fine vesicular pores; 5 percent distinct clay films on vertical faces of peds and 5 percent distinct clay bridges on all faces of peds; carbonate, finely disseminated throughout; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions; clear wavy boundary. Lab sample # 16N02716

Bk1--31 to 56 centimeters (12.2 to 22.0 inches); light gray (10YR 7/2) broken face clay loam, brown (10YR 5/3) broken face, moist; 35 percent sand; 35 percent silt; 30 percent clay; weak coarse prismatic parts to moderate medium subangular blocky, and weak coarse prismatic parts to moderate coarse subangular blocky, and weak coarse prismatic parts to moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and very few fine roots throughout; common very fine tubular and few fine tubular pores; carbonate, finely disseminated throughout and 1 percent fine threadlike carbonate masses on faces of peds and 1 percent fine irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; strongly alkaline, pH 8.5, pH indicator solutions; few iron-manganese nodules on ped faces; gradual wavy boundary. Lab sample # 16N02717

Bk1--56 to 84 centimeters (22.0 to 33.1 inches); light gray (10YR 7/2) broken face clay loam, brown (10YR 5/3) broken face, moist; 35 percent sand; 35 percent silt; 30 percent clay; weak coarse prismatic parts to moderate coarse subangular blocky, and weak coarse prismatic parts to moderate medium subangular blocky, and weak coarse prismatic parts to moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and very few fine roots throughout; common very fine tubular and few fine tubular pores; carbonate, finely disseminated throughout and 1 percent fine threadlike carbonate masses on faces of peds and 1 percent fine irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; strongly alkaline, pH 8.5, pH indicator solutions; few iron-manganese nodules on ped faces; gradual wavy boundary. Lab sample # 16N02718

Bk2--84 to 100 centimeters (33.1 to 39.4 inches); very pale brown (10YR 7/4) broken face loam, light yellowish brown (10YR 6/4) broken face, moist; 30 percent sand; 44 percent silt; 26 percent clay; weak medium subangular blocky, and weak coarse subangular blocky structure; slightly hard, very friable, moderately sticky, slightly plastic; few very fine roots throughout; common very fine tubular and common fine tubular pores; carbonate, finely disseminated throughout and 1 percent coarse irregular carbonate masses on faces of peds and 1 percent medium irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.4, pH indicator solutions; common iron-manganese nodules on ped faces. Lab sample # 16N02719

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 22 2016

Describer: Andy Steinert

NEON Plot ID: CPER_007

Site ID: S2016CO123007

Pedon ID: S2016CO123007

Site Note: NEON Sample Site: CPER_007

Pedon Note: The soil is mapped as Vona sandy loam; 0-3% slopes. The intent was to sample the Vona component in this map unit. The soil pit was described having an ochric epipedon; no argillic horizon; a coarse-loamy particle size control section; and had secondary calcium carbonates. The Vona soil has an argillic horizon; this soil better fits the Otero series.

Lab Source ID: KSSL

Lab Pedon #: 16N0631

Soil Name as Described/Sampled: Otero

Classification: Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: plain

Upslope Shape: concave

Cross Slope Shape: linear

Particle Size Control Section: 25 to 100 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 19 cm.
secondary carbonates 46 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 73 -- Vona sandy loam, 0 to 3 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8619444

Std Longitude: -104.6840000

Latitude: 40 degrees 51 minutes 43.00 seconds north

Longitude: 104 degrees 41 minutes 2.40 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 526632 meters

UTM Northing: 4523480 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, fourwing saltbush, needle and thread, plains pricklypear, sand dropseed, spreading buckwheat, western wheatgrass, xanthoparmelia lichen

Parent Material: eolian sands

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123007 **Pedon ID:** S2016CO123007

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.5	1,648.1	30						well		

A--0 to 19 centimeters (0.0 to 7.5 inches); dark brown (10YR 3/3) broken face sandy loam, dark grayish brown (10YR 4/2) broken face, dry; 75 percent sand; 15 percent silt; 10 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 16N02720

Ab--19 to 46 centimeters (7.5 to 18.1 inches); very dark grayish brown (10YR 3/2) broken face sandy loam, dark grayish brown (10YR 4/2) broken face, dry; 75 percent sand; 15 percent silt; 10 percent clay; weak medium subangular blocky, and weak coarse subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular pores; 15 percent distinct organic stains on all faces of peds; carbonate, finely disseminated throughout; slight effervescence, by HCl, 1 normal; slightly alkaline, pH 7.6, pH indicator solutions; clear wavy boundary. Lab sample # 16N02721

Bk1--46 to 69 centimeters (18.1 to 27.2 inches); brown (10YR 4/3) broken face loamy sand, brown (10YR 5/3) broken face, dry; 80 percent sand; 12 percent silt; 8 percent clay; weak coarse subangular blocky, and weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few very fine roots throughout and few fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 1 percent fine irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions; gradual wavy boundary. Lab sample # 16N02722

Bk2--69 to 100 centimeters (27.2 to 39.4 inches); brown (10YR 5/3) broken face sandy loam, yellowish brown (10YR 5/4) broken face, dry; 75 percent sand; 17 percent silt; 8 percent clay; moderate medium subangular blocky, and moderate coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions. Lab sample # 16N02723

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 16 2016

Describer: Mike Moore

NEON Plot ID: CPER_005

Site ID: S2016CO123008

Pedon ID: S2016CO123008

Site Note: NEON Sample Site: CPER_005

Pedon Note: The soil is mapped as Ascalon fine sandy loam; 0-6% slopes. The intent was to sample the Ascalon component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; a fine-loamy particle size control section; and a calcic horizon. This soil better fits the Wapiti series.

Lab Source ID: KSSL

Lab Pedon #: 16N0632

Soil Name as Described/Sampled: Wapiti

Classification: Fine-loamy, mixed, superactive, mesic Calcidic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on interfluve of interfluve on interfluve of plains

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 10 to 46 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 27 cm.
argillic horizon 10 to 46 cm.
secondary carbonates 27 to 100 cm.
calcic horizon 46 to 68 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 4 -- Ascalon fine sandy loam, 0 to 6 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8532361

Std Longitude: -104.7278833

Latitude: 40 degrees 51 minutes 11.65 seconds north

Longitude: 104 degrees 43 minutes 40.38 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 522936 meters

UTM Northing: 4522501 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, fourwing saltbush, plains pricklypear, western wheatgrass

Parent Material: mixed eolian deposits and/or alluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123008 **Pedon ID:** S2016CO123008

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0	1,673.0	130						well		

A--0 to 10 centimeters (0.0 to 3.9 inches); dark grayish brown (10YR 4/2) broken face sandy clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 25 percent clay; weak fine granular, and weak medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common fine roots throughout; common fine tubular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter; clear smooth boundary. Lab sample # 16N02724

Bt--10 to 27 centimeters (3.9 to 10.6 inches); brown (10YR 4/3) broken face clay loam, dark brown (10YR 3/3) broken face, moist; 36 percent clay; weak medium prismatic, and strong fine angular blocky structure; very hard, very friable, moderately sticky, moderately plastic; common very fine roots throughout; very fine tubular pores; 35 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter; clear wavy boundary. Lab sample # 16N02725

Btk--27 to 46 centimeters (10.6 to 18.1 inches); pale brown (10YR 6/3) broken face sandy clay loam, brown (10YR 5/3) broken face, moist; 32 percent clay; moderate medium prismatic, and moderate medium angular blocky structure; hard, firm, moderately sticky, moderately plastic; very fine roots throughout and fine roots throughout; very fine tubular pores; 15 percent distinct clay films on all faces of peds; 10 percent fine irregular carbonate masses on faces of peds; slight effervescence, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; clear smooth boundary. Lab sample # 16N02726

Bk1--46 to 68 centimeters (18.1 to 26.8 inches); very pale brown (10YR 7/3) broken face sandy clay loam, brown (10YR 5/3) broken face, moist; 27 percent clay; moderate medium prismatic, and weak fine angular blocky, and weak medium angular blocky structure; hard, firm, moderately sticky, moderately plastic; very fine roots throughout; very fine tubular pores; 12 percent fine irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.3, pH meter; gradual smooth boundary. Lab sample # 16N02727

Bk2--68 to 100 centimeters (26.8 to 39.4 inches); very pale brown (10YR 7/3) broken face loam, pale brown (10YR 6/3) broken face, moist; 22 percent clay; weak coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; very fine roots throughout; fine tubular pores; 8 percent fine irregular carbonate masses in matrix; strong effervescence, by HCl, 1 normal; strongly alkaline, pH 8.5, pH meter. Lab sample # 16N02728

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 16 2016

Describer: Andy Steinert

NEON Plot ID: CPER_015

Site ID: S2016CO123009

Pedon ID: S2016CO123009

Site Note: NEON Sample Site: CPER_015

Pedon Note: The soil is mapped as Cascajo gravelly sandy loam; 5-20 slopes. The intent was to sample the Cascajo component in this map unit. The soil pit is located on a landform that is not representative of the Cascajo series. The soil pit was described having a mollic epipedon; a cambic horizon; no calcic horizon; and a coarse-loamy particle size control section. This soil better fits the Paoli series.

Lab Source ID: KSSL

Lab Pedon #: 16N0633

Soil Name as Described/Sampled: Cascajo

Classification: Sandy-skeletal, mixed, mesic Ustic Haplocalcids

Soil Name as Correlated: Paoli

Classification: Coarse-loamy, mixed, superactive, mesic Pachic Haplustolls

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on base slope of dissected alluvial fan

Upslope Shape: linear

Cross Slope Shape: convex

Particle Size Control Section: 65 to 100 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 100 cm.
cambic horizon 10 to 65 cm.
argillic horizon 65 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 20 -- Cascajo gravelly sandy loam, 5 to 20 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8529722

Std Longitude: -104.7448333

Latitude: 40 degrees 51 minutes 10.70 seconds north

Longitude: 104 degrees 44 minutes 41.40 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 521508 meters

UTM Northing: 4522468 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: needle and thread, plains pricklypear, prairie sagewort, prairie sandreed, sand dropseed, spreading buckwheat, yucca

Parent Material: slope alluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123009 **Pedon ID:** S2016CO123009

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
7.0	1,671.8	40						well		

A--0 to 10 centimeters (0.0 to 3.9 inches); dark grayish brown (10YR 4/2) broken face loamy sand, very dark grayish brown (10YR 3/2) broken face, moist; 80 percent sand; 14 percent silt; 6 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.3, pH meter; gradual smooth boundary. Lab sample # 16N02729

Bw1--10 to 23 centimeters (3.9 to 9.1 inches); dark grayish brown (10YR 4/2) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 75 percent sand; 17 percent silt; 8 percent clay; moderate medium subangular blocky parts to weak fine granular, and moderate coarse subangular blocky parts to weak fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; common very fine vesicular pores; nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH meter; gradual smooth boundary. Lab sample # 16N02730

Bw2--23 to 65 centimeters (9.1 to 25.6 inches); dark grayish brown (10YR 4/2) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 75 percent sand; 17 percent silt; 8 percent clay; weak medium subangular blocky, and weak coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; common very fine vesicular pores; nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter; clear smooth boundary. Lab sample # 16N02731

2Atb--65 to 84 centimeters (25.6 to 33.1 inches); very dark grayish brown (10YR 3/2) broken face sandy loam, very dark brown (10YR 2/2) broken face, moist; 70 percent sand; 20 percent silt; 10 percent clay; moderate medium subangular blocky parts to moderate fine subangular blocky, and moderate coarse subangular blocky parts to moderate fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout and few medium roots throughout and common fine roots throughout; common very fine vesicular and few fine vesicular pores; 2 percent faint clay bridges on all faces of peds; 2 percent fine threadlike carbonate masses on faces of peds; nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; very slight effervescence, by HCl, 1 normal; slightly alkaline, pH 7.4, pH meter; very slight effervescence on calcium carbonate threads only; gradual wavy boundary. Lab sample # 16N02732

2Btk--84 to 100 centimeters (33.1 to 39.4 inches); brown (10YR 4/3) broken face sandy loam, dark brown (10YR 3/3) broken face, moist; 70 percent sand; 18 percent silt; 12 percent clay; weak coarse subangular blocky parts to weak fine granular, and weak medium subangular blocky parts to weak fine granular structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; common very fine vesicular and common fine vesicular pores; 5 percent distinct clay films on vertical faces of peds; 2 percent fine threadlike carbonate masses on faces of peds; nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments and nonflat subrounded indurated 76 to 250-millimeter Mixed rock fragments; very slight effervescence, by HCl, 1 normal; slightly alkaline, pH 7.4, pH meter; very slight effervescence on calcium carbonate threads only. Lab sample # 16N02733

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 17 2016

Describer: Andy Steinert

NEON Plot ID: CPER_014

Site ID: S2016CO123010

Pedon ID: S2016CO123010

Site Note: NEON Sample Site: CPER_014

Pedon Note: The soil is mapped as Haverson loam; 0-3 slopes. The intent was to sample the Haverson component in this map unit. The soil pit was described having an ochric epipedon; and a coarse-loamy particle size control section. This soil better fits the Otero series.

Lab Source ID: KSSL

Lab Pedon #: 16N0634

Soil Name as Described/Sampled: Otero

Classification: Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on tread of terrace

Upslope Shape: concave

Cross Slope Shape: linear

Particle Size Control Section: 25 to 100 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 15 cm.
secondary carbonates 63 to 87 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 29 -- Haverson loam, 0 to 3 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8077778

Std Longitude: -104.6978611

Latitude: 40 degrees 48 minutes 28.00 seconds north

Longitude: 104 degrees 41 minutes 52.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 525486 meters

UTM Northing: 4517463 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, fourwing saltbush, needle and thread, plains pricklypear, sand dropseed, western wheatgrass

Parent Material: eolian deposits over alluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123010 **Pedon ID:** S2016CO123010

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
3.0	1,628.0	260						somewhat excessively		

A--0 to 15 centimeters (0.0 to 5.9 inches); dark brown (10YR 3/3) broken face loamy sand, brown (10YR 5/3) broken face, dry; 85 percent sand; 8 percent silt; 7 percent clay; weak medium granular parts to single grain; soft, very friable, nonsticky, nonplastic; common medium roots throughout and common fine roots throughout; noneffervescent, by HCl, 1 normal; neutral, pH 6.7, pH meter; clear smooth boundary. Lab sample # 16N02734

Bw--15 to 63 centimeters (5.9 to 24.8 inches); brown (10YR 4/3) broken face loamy sand, pale brown (10YR 6/3) broken face, dry; 85 percent sand; 8 percent silt; 7 percent clay; weak medium subangular blocky parts to single grain; soft, friable, nonsticky, nonplastic; common medium roots throughout and common fine roots throughout; few very fine vesicular pores; noneffervescent, by HCl, 1 normal; neutral, pH 6.7, pH meter; gradual smooth boundary. Lab sample # 16N02735

Bk--63 to 87 centimeters (24.8 to 34.3 inches); brown (10YR 4/3) broken face loamy sand, brown (10YR 5/3) broken face, dry; 85 percent sand; 7 percent silt; 9 percent clay; moderate medium subangular blocky, and moderate coarse subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots throughout; few very fine vesicular pores; 1 percent faint clay bridges on all faces of peds; 1 percent fine threadlike carbonate masses on faces of peds; very slight effervescence, by HCl, 1 normal; neutral, pH 7.0, pH meter; very slight effervescence on calcium carbonate threads only; gradual smooth boundary. Lab sample # 16N02736

C--87 to 100 centimeters (34.3 to 39.4 inches); brown (10YR 4/3) broken face sandy loam, brown (10YR 5/3) broken face, dry; 80 percent sand; 11 percent silt; 9 percent clay; massive; slightly hard, loose, nonsticky, nonplastic; common very fine roots throughout; common very fine vesicular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter. Lab sample # 16N02737

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 16 2016

Describer: Andy Steinert

NEON Plot ID: CPER_030

Site ID: S2016CO123011

Pedon ID: S2016CO123011

Site Note: NEON Sample Site: CPER_030; This plot is located within a prairie dog town with very sparse vegetation.

Pedon Note: The soil is mapped as Olney fine sandy loam; 6-9% slopes. The intent was to sample the Olney component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; and a fine-loamy particle size control section. This soil better fits the Ascalon series.

Lab Source ID: KSSL

Lab Pedon #: 16N0635

Soil Name as Described/Sampled: Ascalon

Classification: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on footslope of base slope of hill

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 20 to 68 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 20 cm.
argillic horizon 20 to 68 cm.
secondary carbonates 41 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 45 -- Olney fine sandy loam, 6 to 9 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.7979444

Std Longitude: -104.6845278

Latitude: 40 degrees 47 minutes 52.60 seconds north

Longitude: 104 degrees 41 minutes 4.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 526613 meters

UTM Northing: 4516375 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, buffalograss, fourwing saltbush, plains pricklypear, threeawn

Parent Material: slope alluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123011 **Pedon ID:** S2016CO123011

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
4.0	1,608.1	50						well		

A--0 to 20 centimeters (0.0 to 7.9 inches); brown (10YR 4/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 22 percent clay; weak medium subangular blocky parts to weak fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common fine roots throughout; common fine tubular pores; noneffervescent, by HCl, 1 normal; neutral, pH 6.8, pH meter; clear smooth boundary. Lab sample # 16N02738

Bt--20 to 41 centimeters (7.9 to 16.1 inches); yellowish brown (10YR 5/4) broken face sandy clay, brown (10YR 4/3) broken face, moist; 38 percent clay; weak medium prismatic parts to weak fine subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; common fine roots throughout; common fine tubular pores; 25 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 6.8, pH meter; clear smooth boundary. Lab sample # 16N02739

Btk--41 to 68 centimeters (16.1 to 26.8 inches); yellowish brown (10YR 5/4) broken face sandy clay loam, dark yellowish brown (10YR 4/4) broken face, moist; 25 percent clay; moderate coarse prismatic parts to weak medium subangular blocky, and moderate medium prismatic parts to weak medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common fine roots throughout; common medium tubular and common fine tubular pores; 20 percent distinct clay films on all faces of peds; 4 percent fine irregular carbonate masses in matrix and 1 percent very fine threadlike carbonate masses in matrix; nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; neutral, pH 7.3, pH meter; clear smooth boundary. Lab sample # 16N02740

BCk--68 to 100 centimeters (26.8 to 39.4 inches); light yellowish brown (10YR 6/4) broken face sandy loam, yellowish brown (10YR 5/4) broken face, moist; 12 percent clay; massive parts to single grain; slightly hard, friable, nonsticky, nonplastic; very fine roots; very fine pores; 10 percent medium irregular carbonate masses in matrix and 2 percent medium irregular carbonate masses on bottom of rock fragments; nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter. Lab sample # 16N02741

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 17 2016

Describer: Mike Moore

NEON Plot ID: CPER_020

Site ID: S2016CO123012

Pedon ID: S2016CO123012

Site Note: NEON Sample Site: CPER_020

Pedon Note: The soil is mapped as Renohill-Shingle complex; 3-9% slopes. The intent was to sample the Renohill or Shingle component in this map unit. The soil pit was described having an ochric epipedon; an argillic horizon; secondary calcium carbontes; and a fine particle size control section. This soil better fits the Ulmet series.

Lab Source ID: KSSL

Lab Pedon #: 16N0636

Soil Name as Described/Sampled: Ulmet

Classification: Fine, smectitic, mesic Aridic Haplustalfs

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on footslope of base slope of hillslope on footslope of base slope of hills

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 14 to 64 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 14 cm.
argillic horizon 14 to 100 cm.
secondary carbonates 82 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 57 -- Renohill-Shingle complex, 3 to 9 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.7858611

Std Longitude: -104.7078333

Latitude: 40 degrees 47 minutes 9.10 seconds north

Longitude: 104 degrees 42 minutes 28.20 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 524650 meters

UTM Northing: 4515029 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: fourwing saltbush, plains pricklypear, western wheatgrass

Parent Material: eolian deposits and/or slope alluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123012 **Pedon ID:** S2016CO123012

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
5.0	1,611.9	210						well		

A--0 to 14 centimeters (0.0 to 5.5 inches); brown (10YR 4/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 25 percent clay; moderate medium granular, and moderate fine granular structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout; common very fine tubular pores; noneffervescent, by HCl, 1 normal; neutral, pH 6.8, pH indicator solutions; gradual smooth boundary. Lab sample # 16N02742

Bt1--14 to 39 centimeters (5.5 to 15.4 inches); yellowish brown (10YR 5/4) broken face sandy clay, brown (10YR 4/3) broken face, moist; 36 percent clay; moderate coarse subangular blocky, and moderate medium subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine roots throughout and common fine roots throughout and common coarse roots throughout; common very fine tubular pores; 30 percent faint clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 16N02743

Bt2--39 to 82 centimeters (15.4 to 32.3 inches); yellowish brown (10YR 5/4) broken face sandy clay, dark yellowish brown (10YR 4/4) broken face, moist; 42 percent clay; strong coarse prismatic parts to strong medium subangular blocky, and strong very coarse prismatic parts to strong coarse subangular blocky structure; very hard, very firm, slightly sticky, very plastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout and common coarse roots throughout; common very fine tubular pores; 65 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH indicator solutions; clear smooth boundary. Lab sample # 16N02744

2Btk--82 to 100 centimeters (32.3 to 39.4 inches); pale brown (10YR 6/3) broken face sandy clay loam, brown (10YR 5/3) broken face, moist; 30 percent clay; moderate medium subangular blocky, and moderate fine subangular blocky structure; hard, very firm, slightly sticky, very plastic; common very fine roots throughout and common coarse roots throughout; common very fine pores; 10 percent faint clay films on all faces of peds; 6 percent fine threadlike carbonate masses and 6 percent medium threadlike carbonate masses; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH indicator solutions. Lab sample # 16N02745

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 22 2016

Describer: Mike Moore

NEON Plot ID: CPER_023

Site ID: S2016CO123013

Pedon ID: S2016CO123013

Site Note: NEON Sample Site: CPER_023

Pedon Note: The soil is mapped as Renohill fine sandy loam; 0-6% slopes. The intent was to sample the Renohill component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; a fine-loamy particle size control section; and no signs of bedrock within 100 centimeters of the soil surface. This soil better fits the Ascalon series.

Lab Source ID: KSSL

Lab Pedon #: 16N0637

Soil Name as Described/Sampled: Ascalon

Classification: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: plain

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 17 to 67 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 37 cm.
argillic horizon 17 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 55 -- Renohill fine sandy loam, 0 to 6 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.8008111

Std Longitude: -104.7416472

Latitude: 40 degrees 48 minutes 2.92 seconds north

Longitude: 104 degrees 44 minutes 29.93 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 521793 meters

UTM Northing: 4516678 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: aster, barrel cactus, blue grama, buffalograss, sand dropseed, threeawn

Parent Material: eolian deposits over residuum

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123013 **Pedon ID:** S2016CO123013

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0	1,655.0	290						well		

A--0 to 17 centimeters (0.0 to 6.7 inches); brown (10YR 5/3) broken face sandy loam, dark yellowish brown (10YR 3/4) broken face, moist; 72 percent sand; 12 percent silt; 16 percent clay; weak medium subangular blocky parts to weak fine granular structure; slightly hard, friable, nonsticky, nonplastic; common fine roots throughout; common fine tubular pores; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter; clear smooth boundary. Lab sample # 16N02746

Bt1--17 to 37 centimeters (6.7 to 14.6 inches); brown (10YR 5/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 70 percent sand; 8 percent silt; 22 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, moderately plastic; fine roots throughout; common fine tubular pores; 3 percent faint clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; abrupt wavy boundary. Lab sample # 16N02747

Bt2--37 to 72 centimeters (14.6 to 28.3 inches); brown (10YR 5/3) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 50 percent sand; 19 percent silt; 31 percent clay; moderate medium prismatic parts to strong medium angular blocky structure; very hard, friable, moderately sticky, moderately plastic; fine roots between peds; common medium tubular and common fine tubular pores; 40 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; clear smooth boundary. Lab sample # 16N02748

2Btb--72 to 100 centimeters (28.3 to 39.4 inches); gray (10YR 5/1) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 30 percent sand; 41 percent silt; 29 percent clay; moderate medium prismatic parts to strong medium angular blocky structure; very hard, friable, very sticky, moderately plastic; very fine roots between peds; common medium tubular pores; 20 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter. Lab sample # 16N02749

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 21 2016

Describer: Mike Moore

NEON Plot ID: CPER_008

Site ID: S2016CO123014

Pedon ID: S2016CO123014

Site Note: NEON Sample Site: CPER_008

Pedon Note: The soil is mapped as Terry sandy loam; 3-9% slopes. The intent was to sample the Terry component in this map unit. The soil pit was described having an ochric epipedon; an argillic horizon; a fine particle size control section; secondary calcium carbonates; and had shale fragments in the lower two horizons; but no other signs of bedrock within 100 centimeters of the soil surface. This soil is sampled as the Renohill series; as this is the best fit at this time.

Lab Source ID: KSSL

Lab Pedon #: 16N0638

Soil Name as Described/Sampled: Renohill

Classification: Fine, smectitic, mesic Aridic Haplustalfs

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on backslope of side slope of hill

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 7 to 28 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 7 cm.
argillic horizon 7 to 28 cm.
secondary carbonates 28 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 65 -- Terry sandy loam, 3 to 9 percent slopes

Pit Location:

Quad Name: Eastman Creek South, Colorado

Std Latitude: 40.7987222

Std Longitude: -104.7490000

Latitude: 40 degrees 47 minutes 55.40 seconds north

Longitude: 104 degrees 44 minutes 56.40 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 521173 meters

UTM Northing: 4516445 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, buffalograss, plains pricklypear, sand dropseed, threeawn, western wheatgrass

Parent Material: slope alluvium over residuum

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123014 **Pedon ID:** S2016CO123014

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
6.0	1,646.0	20						well		

A--0 to 7 centimeters (0.0 to 2.8 inches); brown (10YR 5/3) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 50 percent sand; 22 percent silt; 28 percent clay; weak medium granular, and weak fine granular structure; soft, friable, moderately sticky, moderately plastic; common fine roots throughout; common very fine tubular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter; clear smooth boundary. Lab sample # 16N02750

Bt--7 to 28 centimeters (2.8 to 11.0 inches); dark yellowish brown (10YR 4/4) broken face clay loam, dark yellowish brown (10YR 4/6) broken face, moist; 42 percent sand; 20 percent silt; 38 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, very plastic; common fine roots throughout; common fine tubular pores; 10 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.3, pH meter; abrupt smooth boundary. Lab sample # 16N02751

Bk--28 to 57 centimeters (11.0 to 22.4 inches); light gray (10YR 7/1) broken face sandy clay loam, yellowish brown (10YR 5/4) broken face, moist; 65 percent sand; 6 percent silt; 29 percent clay; strong coarse prismatic parts to strong coarse angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common fine roots throughout; common fine tubular pores; 8 percent fine threadlike carbonate masses in matrix; strong effervescence, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter; clear wavy boundary. Lab sample # 16N02752

BCk--57 to 77 centimeters (22.4 to 30.3 inches); pale yellow (2.5Y 7/4) broken face and gray (2.5Y 5/1) broken face silty clay loam, olive yellow (2.5Y 6/6) broken face and dark gray (2.5Y 4/1) broken face, moist; 15 percent sand; 49 percent silt; 36 percent clay; weak medium prismatic parts to moderate medium angular blocky structure; hard, firm, very sticky, very plastic; common fine roots throughout; common very fine tubular pores; 8 percent fine irregular carbonate masses in matrix; 10 percent flat subangular moderately cemented 2 to 20-millimeter Shale fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; gradual wavy boundary. Lab sample # 16N02753

CBk--77 to 100 centimeters (30.3 to 39.4 inches); gray (2.5Y 5/1) broken face paragravelly silty clay, dark gray (2.5Y 4/1) broken face, moist; 8 percent sand; 47 percent silt; 45 percent clay; weak medium angular blocky structure; extremely hard, very firm, very sticky, very plastic; common very fine roots throughout and common fine roots throughout; common fine tubular pores; 4 percent fine threadlike carbonate masses in matrix and 4 percent medium irregular carbonate masses in matrix; 20 percent flat subangular moderately cemented 5 to 20-millimeter Shale fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.3, pH meter. Lab sample # 16N02754

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 22 2016
Describer: Mike Moore
NEON Plot ID: CPER_016
Site ID: S2016CO123015

Pedon ID: S2016CO123015

Site Note: NEON Sample Site: CPER_016

Pedon Note: The soil is mapped as Ascalon fine sandy loam; 0-6% slopes. The intent was to sample the Ascalon component in this map unit. The soil pit was described having an ochric epipedon; an argillic horizon; a fine-loamy particle size control section; and secondary calcium carbonates. This soil fits the Olnest series; as this soil does not have a mollic epipedon.

Lab Source ID: KSSL
Lab Pedon #: 16N0639
Soil Name as Described/Sampled: Olnest
Classification: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Soil Name as Correlated:

Classification:
Pedon Type: correlates to named soil
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on summit of interfluve of broad, flat interfluve
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 12 to 38 cm.
Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 12 cm.
argillic horizon 12 to 38 cm.
secondary carbonates 38 to 100 cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 4 -- Ascalon fine sandy loam, 0 to 6 percent slopes
Pit Location:

Quad Name: Dover, Colorado

Std Latitude: 40.8043333
Std Longitude: -104.7561667

Latitude: 40 degrees 48 minutes 15.60 seconds north
Longitude: 104 degrees 45 minutes 22.20 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 520567 meters
UTM Northing: 4517067 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: aster, blue grama, plains pricklypear, western wheatgrass
Parent Material: eolian deposits and/or alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2016CO123015 **Pedon ID:** S2016CO123015

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0	1,643.0	360						well		

A--0 to 12 centimeters (0.0 to 4.7 inches); brown (10YR 5/3) broken face sandy loam, brown (10YR 4/3) broken face, moist; 65 percent sand; 20 percent silt; 15 percent clay; weak fine subangular blocky structure; hard, friable, nonsticky, nonplastic; common fine roots throughout; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; clear smooth boundary. Lab sample # 16N02755

Bt--12 to 38 centimeters (4.7 to 15.0 inches); brown (10YR 4/3) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 65 percent sand; 10 percent silt; 25 percent clay; weak medium subangular blocky structure; hard, firm, nonsticky, nonplastic; common fine roots throughout; common fine tubular pores; 5 percent faint clay films on all faces of peds; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; clear smooth boundary. Lab sample # 16N02756

Bk1--38 to 51 centimeters (15.0 to 20.1 inches); pale brown (10YR 6/3) broken face sandy loam, brown (10YR 4/3) broken face, moist; 60 percent sand; 24 percent silt; 16 percent clay; weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots throughout; common fine tubular pores; 1 percent very fine spherical carbonate masses in matrix; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; gradual smooth boundary. Lab sample # 16N02757

Bk2--51 to 67 centimeters (20.1 to 26.4 inches); pale yellow (2.5Y 7/3) broken face sandy loam, light olive brown (2.5Y 5/4) broken face, moist; 60 percent sand; 25 percent silt; 15 percent clay; weak medium prismatic parts to weak fine subangular blocky structure; hard, friable, nonsticky, nonplastic; common fine roots throughout; common fine tubular pores; 1 percent very fine spherical carbonate masses in matrix; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; clear smooth boundary. Lab sample # 16N02758

Bk3--67 to 100 centimeters (26.4 to 39.4 inches); light gray (2.5Y 7/2) broken face loam, light olive brown (2.5Y 5/3) broken face, moist; 45 percent sand; 37 percent silt; 18 percent clay; weak medium prismatic parts to moderate medium subangular blocky structure; hard, friable, nonsticky, nonplastic; common fine roots throughout; common fine tubular pores; 12 percent medium irregular carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter. Lab sample # 16N02759

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017

Description Date: Mar 28 2016

Describer: Andy Steinert

NEON Plot ID: CPER_012

Site ID: S2016CO123016

Pedon ID: S2016CO123016

Site Note: NEON Sample Site: CPER_012

Pedon Note: The soil is mapped as Renohill-Shingle complex; 3-9% slopes. The intent was to sample the Renohill or Shingle component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; a fine-loamy particle size control section; and secondary calcium carbonates. There were signs of bedrock in the lower horizon; sandstone and shale fragments present. This soil was sampled as the Cushman series; as this is the best fit at this time.

Lab Source ID: KSSL

Lab Pedon #: 16N0640

Soil Name as Described/Sampled: Cushman

Classification: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: correlates to named soil

Pedon Purpose: research site

Taxon Kind: series

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on backslope of side slope of hillslope

Upslope Shape: linear

Cross Slope Shape: convex

Particle Size Control Section: 10 to 50 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 21 cm.
argillic horizon 10 to 50 cm.
secondary carbonates 50 to 100 cm.

Country:

State: Colorado

County: Weld

MLRA: 67B -- Central High Plains, Southern Part

Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado

Map Unit: 57 -- Renohill-Shingle complex, 3 to 9 percent slopes

Pit Location:

Quad Name: Dover, Colorado

Std Latitude: 40.8021111

Std Longitude: -104.7714722

Latitude: 40 degrees 48 minutes 7.60 seconds north

Longitude: 104 degrees 46 minutes 17.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 519277 meters

UTM Northing: 4516815 meters

Primary Earth Cover: Grass/herbaceous cover

Secondary Earth Cover: Grassland rangeland

Existing Vegetation: blue grama, broom snakeweed, field pennycress, sand dropseed, sixweeks fescue, squirreltail, threeawn

Parent Material: residuum weathered from sandstone and shale

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2016CO123016 **Pedon ID:** S2016CO123016

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
7.0	1,641.3	152						well		

A--0 to 10 centimeters (0.0 to 3.9 inches); brown (10YR 4/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 55 percent sand; 22 percent silt; 23 percent clay; weak fine subangular blocky parts to weak fine granular structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots throughout; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; clear smooth boundary. Lab sample # 16N02760

Bt1--10 to 21 centimeters (3.9 to 8.3 inches); brown (10YR 4/3) broken face sandy clay loam, dark brown (10YR 3/3) broken face, moist; 55 percent sand; 22 percent silt; 23 percent clay; weak coarse prismatic parts to weak fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common fine roots throughout; few very fine vesicular pores; 15 percent distinct clay films on vertical faces of peds; 1 percent nonflat subrounded indurated 5 to 20-millimeter Quartz fragments; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; clear smooth boundary. Lab sample # 16N02761

Bt2--21 to 50 centimeters (8.3 to 19.7 inches); yellowish brown (10YR 5/4) broken face clay loam, dark yellowish brown (10YR 4/4) broken face, moist; 43 percent sand; 27 percent silt; 30 percent clay; 3 percent medium prominent irregular (7.5YR 6/8) mottles; moderate medium prismatic parts to moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine roots throughout and common fine roots throughout; common very fine vesicular pores; 5 percent prominent clay films on all faces of peds and 25 percent prominent clay films on all faces of peds; 5 percent medium irregular carbonate masses on bottom of rock fragments; 1 percent nonflat subrounded indurated 5 to 20-millimeter Quartz fragments and 2 percent nonflat rounded strongly cemented 5 to 20-millimeter Iron-manganese nodules; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter; clear smooth boundary. Lab sample # 16N02762

Bk--50 to 78 centimeters (19.7 to 30.7 inches); light yellowish brown (10YR 6/4) broken face loam, yellowish brown (10YR 5/6) broken face, moist; 50 percent sand; 28 percent silt; 22 percent clay; 2 percent medium prominent irregular (7.5YR 6/8) mottles; weak coarse prismatic parts to moderate medium angular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine roots throughout; common very fine vesicular and few fine vesicular pores; 2 percent fine irregular carbonate masses in matrix and 1 percent fine irregular carbonate masses on bottom of rock fragments; 2 percent nonflat rounded strongly cemented 2 to 5-millimeter Iron-manganese nodules and 2 percent nonflat rounded strongly cemented 5 to 20-millimeter Iron-manganese nodules; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; texture high in fine sand; clear wavy boundary. Lab sample # 16N02763

CBk--78 to 100 centimeters (30.7 to 39.4 inches); 80 percent light yellowish brown (2.5Y 6/4) broken face and 20 percent gray (10YR 5/1) broken face extremely paragravelly silty clay loam, 80 percent light olive brown (2.5Y 5/6) broken face and 20 percent grayish brown (10YR 5/2) broken face, moist; 10 percent sand; 54 percent silt; 36 percent clay; 8 percent medium prominent irregular (7.5YR 5/6) mottles; hard, firm, moderately sticky, very plastic; common very fine roots throughout; 8 percent medium threadlike carbonate masses in matrix; 8 percent flat angular indurated 20 to 75-millimeter Sandstone fragments and 60 percent flat angular strongly cemented 2 to 20-millimeter Shale fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.3, pH meter. Lab sample # 16N02764

PEDON DESCRIPTION -- NEON Site CPER

Print Date: Sep 3 2017
Description Date: Mar 28 2016
Describer: Andy Steinert
NEON Plot ID: CPER_019
Site ID: S2016CO123017

Pedon ID: S2016CO123017

Site Note: NEON Sample Site: CPER_019

Pedon Note: The soil is mapped as Renohill-Shingle complex; 3-9% slopes. The intent was to sample the Renohill or Shingle component in this map unit. The soil pit was described having a mollic epipedon; an argillic horizon; a fine particle size control section; and secondary calcium carbonates. There were signs of bedrock in the lower horizon. This soil was sampled as the Renohill series; as this is the best fit at this time.

Lab Source ID: KSSL
Lab Pedon #: 16N0641
Soil Name as Described/Sampled: Renohill
Classification: Fine, smectitic, mesic Aridic Argiustolls

Soil Name as Correlated:

Classification:
Pedon Type: correlates to named soil
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division: Interior Plains
Physiographic Province: Great Plains Province
Physiographic Section: Colorado Piedmont

State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on backslope of side slope of hill
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 21 to 48 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 21 cm.
argillic horizon 21 to 48 cm.
secondary carbonates 48 to 100 cm.

Country:
State: Colorado
County: Weld
MLRA: 67B -- Central High Plains, Southern Part
Soil Survey Area: CO617 -- Weld County, Colorado, Northern Part
5-FTM -- Fort Morgan, Colorado
Map Unit: 57 -- Renohill-Shingle complex, 3 to 9 percent slopes
Pit Location:

Quad Name: Dover, Colorado

Std Latitude: 40.8246667
Std Longitude: -104.7859444

Latitude: 40 degrees 49 minutes 28.80 seconds north
Longitude: 104 degrees 47 minutes 9.40 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 518051 meters
UTM Northing: 4519317 meters

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation: blue grama, gumweed, needle and thread, plains pricklypear, threeawn
Parent Material: eolian deposits over residuum
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2016CO123017 **Pedon ID:** S2016CO123017

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
12.0	1,657.2	220						well		

A--0 to 21 centimeters (0.0 to 8.3 inches); dark grayish brown (10YR 4/2) broken face sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 53 percent sand; 29 percent silt; 18 percent clay; weak fine subangular blocky parts to weak fine granular structure; soft, friable, nonsticky, nonplastic; common fine roots throughout; 5 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; clear wavy boundary. Lab sample # 16N02765

Bt--21 to 48 centimeters (8.3 to 18.9 inches); 75 percent light yellowish brown (10YR 6/4) broken face and 25 percent yellowish brown (10YR 5/8) broken face silty clay, 75 percent yellowish brown (10YR 5/4) broken face and 25 percent yellowish brown (10YR 5/8) broken face, moist; 15 percent sand; 39 percent silt; 46 percent clay; 2 percent fine prominent irregular (2.5Y 6/4) and 3 percent fine distinct irregular (10YR 5/2) mottles; weak medium prismatic parts to weak fine angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common fine roots throughout; common very fine vesicular pores; 12 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; 2% 10YR 3/2 colored soil material in cracks; gradual wavy boundary. Lab sample # 16N02766

Bk--48 to 71 centimeters (18.9 to 28.0 inches); 75 percent light yellowish brown (10YR 6/4) broken face and 25 percent strong brown (7.5YR 5/8) broken face silty clay loam, 75 percent yellowish brown (10YR 5/4) broken face and 25 percent strong brown (7.5YR 5/8) broken face, moist; 16 percent sand; 50 percent silt; 34 percent clay; 10 percent prominent irregular (10YR 5/8) mottles; weak medium prismatic parts to weak fine angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine roots throughout and common fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike carbonate masses in matrix; strong effervescence, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; 2% 10YR 3/2 colored soil material in cracks; clear wavy boundary. Lab sample # 16N02767

BCk--71 to 100 centimeters (28.0 to 39.4 inches); 75 percent light brownish gray (10YR 6/2) broken face and 25 percent pinkish gray (7.5YR 6/2) broken face silty clay, 75 percent grayish brown (10YR 5/2) broken face and 25 percent brown (7.5YR 5/3) broken face, moist; 5 percent sand; 53 percent silt; 42 percent clay; 10 percent prominent irregular (10YR 5/6) mottles; moderate coarse prismatic parts to moderate fine angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine roots throughout; few very fine vesicular pores; 25 percent prominent pressure faces on all faces of peds; carbonate, finely disseminated throughout and 2 percent fine irregular carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; texture high in fine sand. Lab sample # 16N02768