PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017

Description Date: Nov 2 2015

Describer: Paul Rindfleisch

NEON Plot ID: STER_033

Site ID: S2015CO075001

Pedon ID: S2015CO075001

Site Note: NEON Sample Site: STER_033

Pedon Note: The soil is mapped as the Wagonwheel-Stoneham complex; 2-5% slopes. The intent was to sample the Stoneham component in this map unit. The soil pit was described having a mollic epipedon that was thick enough to be pachic; which correlates to the Sampson series.

Lab Source ID: KSSL

Lab Pedon #: 16N0329

Soil Name as Described/Sampled: Sampson

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: on backslope of head slope of hill on rolling plains

Upslope Shape: concave

Cross Slope Shape: concave

Particle Size Control Section: 16 to 57 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 57 cm.
argillic horizon 16 to 57 cm.
secondary carbonates 57 to 100 cm.

Country:

State: Colorado

County: Logan

MLRA: 72 -- Central High Tableland

Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado

Map Unit: 110 -- Wagonwheel-Stoneham complex, 2 to 5 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4762778

Std Longitude: -103.0120278

Latitude: 40 degrees 28 minutes 34.60 seconds north

Longitude: 103 degrees 0 minutes 43.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 668512 meters

UTM Northing: 4482520 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Close-grown crop

Existing Vegetation:

Parent Material: eolian deposits

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2015CO075001 **Pedon ID:** S2015CO075001

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	1,360.6	3						well		

Ap1--0 to 7 centimeters (0.0 to 2.8 inches); dark grayish brown (10YR 4/2) broken face loam, very dark grayish brown (10YR 3/2) broken face, moist; 50 percent sand; 28 percent silt; 22 percent clay; weak medium subangular blocky parts to weak fine granular, and weak fine subangular blocky parts to weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.7, pH meter; texture high in fine sand; clear smooth boundary. Lab sample # 16N01291

Ap2--7 to 16 centimeters (2.8 to 6.3 inches); dark grayish brown (10YR 4/2) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 43 percent sand; 25 percent silt; 32 percent clay; moderate thick platy structure; moderately hard, very friable, moderately sticky, moderately plastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout; common medium vesicular and common fine vesicular pores; 10 percent distinct pressure faces on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; texture high in fine sand; clear wavy boundary. Lab sample # 16N01292

Bt--16 to 57 centimeters (6.3 to 22.4 inches); brown (10YR 4/3) broken face clay loam, dark brown (10YR 3/3) broken face, moist; 43 percent sand; 25 percent silt; 32 percent clay; strong coarse prismatic parts to strong fine prismatic parts to strong medium angular blocky, and strong coarse prismatic parts to strong fine prismatic parts to strong coarse angular blocky, and strong coarse prismatic parts to strong fine prismatic parts to strong medium prismatic parts to strong medium angular blocky, and strong coarse prismatic parts to strong fine prismatic parts to strong medium prismatic parts to strong coarse angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine roots throughout; common medium vesicular and common fine vesicular pores; 20 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.8, pH meter; texture high in fine sand; clear wavy boundary. Lab sample # 16N01293

Bk--57 to 100 centimeters (22.4 to 39.4 inches); pale brown (10YR 6/3) broken face loam, brown (10YR 4/3) broken face, moist; 35 percent sand; 40 percent silt; 25 percent clay; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine roots throughout; common fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine irregular carbonate masses on faces of peds and 3 percent medium irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; texture high in fine sand. Lab sample # 16N01294

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017

Description Date: Nov 3 2015

Describer: Paul Rindfleisch

NEON Plot ID: STER_027

Site ID: S2015CO075002

Pedon ID: S2015CO075002

Site Note: NEON Sample Site: STER_027

Pedon Note: The soil is mapped as the Wagonwheel-Colby-Stoneham association; 5-12% slopes. The intent was to sample the Stoneham component in this map unit. The soil pit was described having a calcic horizon; there currently are no series that fit this classification.

Lab Source ID: KSSL

Lab Pedon #: 16N0330

Soil Name as Described/Sampled: Stoneham

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

Soil Name as Correlated:

Classification:

Pedon Type: undefined observation

Pedon Purpose: research site

Taxon Kind: family

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 interfluve on rolling plains

Upslope Shape: convex

Cross Slope Shape: convex

Particle Size Control Section: 10 to 27 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 10 cm.
argillic horizon 10 to 27 cm.
calcic horizon 27 to 69 cm.

Country:

State: Colorado

County: Logan

MLRA: 72 -- Central High Tableland

Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado

Map Unit: 111 -- Wagonwheel-Colby-Stoneham association, 5 to 12 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4807222

Std Longitude: -103.0189722

Latitude: 40 degrees 28 minutes 50.60 seconds north

Longitude: 103 degrees 1 minutes 8.30 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 667914 meters

UTM Northing: 4483001 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Close-grown crop

Existing Vegetation:

Parent Material: loess

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2015CO075002 **Pedon ID:** S2015CO075002

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	1,360.6	140						well		

Ap--0 to 10 centimeters (0.0 to 3.9 inches); brown (10YR 5/3) broken face loam, very dark grayish brown (10YR 3/2) broken face, moist; 35 percent sand; 41 percent silt; 24 percent clay; moderate coarse subangular blocky, and weak thick platy structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout and few fine roots throughout; few very fine vesicular and few medium vesicular pores; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.6, pH meter; pH 7.2 (Phenol Red indicator); texture high in fine sand; abrupt smooth boundary. Lab sample # 16N01295

Bt--10 to 27 centimeters (3.9 to 10.6 inches); brown (10YR 5/3) broken face clay loam, brown (10YR 4/3) broken face, moist; 25 percent sand; 43 percent silt; 32 percent clay; strong medium prismatic parts to strong medium angular blocky parts to strong fine angular blocky, and strong fine prismatic structure; very hard, firm, moderately sticky, moderately plastic; few very fine roots throughout and very few fine roots throughout; common very fine vesicular and few fine vesicular pores; 60 percent prominent 10YR 3/2), moist, clay films on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.7, pH meter; pH 7.3 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01296

Bk--27 to 69 centimeters (10.6 to 27.2 inches); light gray (10YR 7/2) broken face silt loam, brown (10YR 5/3) broken face, moist; 25 percent sand; 53 percent silt; 22 percent clay; moderate coarse angular blocky, and moderate medium angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots throughout; common very fine vesicular and common fine vesicular pores; 1 percent fine irregular carbonate masses on faces of peds and 1 percent fine threadlike carbonate masses on faces of peds; violent effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.6 (Thymol-blue indicator); gradual wavy boundary. Lab sample # 16N01297

C--69 to 100 centimeters (27.2 to 39.4 inches); pale brown (10YR 6/3) broken face loam, brown (10YR 4/3) broken face, moist; 43 percent sand; 45 percent silt; 12 percent clay; weak coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; very few very fine roots throughout; few very fine vesicular pores; carbonate, finely disseminated throughout and 1 percent fine irregular carbonate masses at top of horizon; strong effervescence, by HCl, 1 normal; strongly alkaline, pH 8.6, pH meter; texture high in fine sand; pH 8.2 (Thymol-blue indicator). Lab sample # 16N01298

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017

Description Date: Nov 3 2015

Describer: Paul Rindfleisch

NEON Plot ID: STER_034

Site ID: S2015CO075003

Pedon ID: S2015CO075003

Site Note: NEON Sample Site: STER_034

Pedon Note: The soil is mapped as the Wagonwheel-Colby-Stoneham association; 5-12% slopes. The intent was to sample the Colby component in this map unit. The soil pit was described showing development in the soil structure in the Bk1 and Bk2 horizons; also has a calcic horizon; and is coarse-loamy; there currently are no series that fit this classification.

Lab Source ID: KSSL

Lab Pedon #: 16N0331

Soil Name as Described/Sampled: Colby

Classification: Coarse-loamy, mixed, superactive, mesic Haplocalcidic Haplustepts

Soil Name as Correlated:

Classification:

Pedon Type: undefined observation

Pedon Purpose: research site

Taxon Kind: family

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on shoulder of side slope of interfluve on rolling plains

Upslope Shape: convex

Cross Slope Shape: linear

Particle Size Control Section: 25 to 100 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 14 cm.
calcic horizon 14 to 80 cm.

Country:

State: Colorado

County: Logan

MLRA: 72 -- Central High Tableland

Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado

Map Unit: 111 -- Wagonwheel-Colby-Stoneham association, 5 to 12 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4785278

Std Longitude: -103.0194167

Latitude: 40 degrees 28 minutes 42.70 seconds north

Longitude: 103 degrees 1 minutes 9.90 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 667881 meters

UTM Northing: 4482756 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Close-grown crop

Existing Vegetation:

Parent Material: eolian deposits

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2015CO075003 **Pedon ID:** S2015CO075003

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	1,364.9	225						well		

Ap--0 to 14 centimeters (0.0 to 5.5 inches); brown (10YR 4/3) broken face fine sandy loam, very dark grayish brown (10YR 3/2) broken face, moist; 65 percent sand; 21 percent silt; 14 percent clay; moderate medium subangular blocky parts to moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, nonplastic; common very fine roots throughout and common fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 7.9, pH meter; pH 7.4 (Phenol Red indicator); abrupt smooth boundary. Lab sample # 16N01299

Bk1--14 to 41 centimeters (5.5 to 16.1 inches); pale brown (10YR 6/3) broken face fine sandy loam, yellowish brown (10YR 5/4) broken face, moist; 60 percent sand; 24 percent silt; 16 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; moderately hard, very friable, slightly sticky, nonplastic; common very fine roots throughout and few fine roots throughout; common very fine dendritic tubular and many very fine irregular and common fine dendritic tubular pores; carbonate, finely disseminated throughout and 15 percent fine threadlike 10YR 8/2) carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; texture high in very fine sand; pH 8.2 (Thymol-blue indicator); gradual smooth boundary. Lab sample # 16N01300

Bk2--41 to 80 centimeters (16.1 to 31.5 inches); light yellowish brown (10YR 6/4) broken face fine sandy loam, dark yellowish brown (10YR 4/4) broken face, moist; 60 percent sand; 28 percent silt; 12 percent clay; moderate coarse prismatic parts to moderate medium subangular blocky structure; moderately hard, very friable, slightly sticky, nonplastic; few fine roots throughout; common very fine dendritic tubular and many very fine irregular and common fine dendritic tubular pores; carbonate, finely disseminated throughout and 12 percent medium irregular 10YR 8/1) carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.2 (Thymol-blue indicator); texture high in very fine sand; gradual smooth boundary. Lab sample # 16N01301

C--80 to 100 centimeters (31.5 to 39.4 inches); light yellowish brown (10YR 6/4) broken face fine sandy loam, yellowish brown (10YR 5/4) broken face, moist; 65 percent sand; 25 percent silt; 10 percent clay; massive; moderately hard, very friable, slightly sticky, nonplastic; few fine roots throughout; common very fine dendritic tubular pores; carbonate, finely disseminated throughout and 1 percent fine irregular 10YR 8/1) carbonate masses in matrix; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.4, pH meter; pH 8.2 (Thymol-blue indicator). Lab sample # 16N01302

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 3 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_029
Site ID: S2015CO075004

Pedon ID: S2015CO075004

Site Note: NEON Sample Site: STER_029; Located at the base of a hill/interfluve that has a drainageway to the east.

Pedon Note: The soil is mapped as the Rago loam. The intent was to sample the Rago component in this map unit. The soil pit was described with a fine-silty particle size class; which correlates to the Kuma series.

Lab Source ID: KSSL
Lab Pedon #: 16N0332
Soil Name as Described/Sampled: Kuma
Classification: Fine-silty, 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: on toeslope of base slope of interfluve on rolling plains
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 39 to 89 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 100 cm.
argillic horizon 39 to 100 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 92 -- Rago loam, 0 to 3 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4687222
Std Longitude: -103.0115556

Latitude: 40 degrees 28 minutes 7.40 seconds north
Longitude: 103 degrees 0 minutes 41.60 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 668571 meters
UTM Northing: 4481682 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Close-grown crop
Existing Vegetation:
Parent Material: eolian deposits and/or alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015CO075004 **Pedon ID:** S2015CO075004

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	1,356.1	90						well		

Ap--0 to 17 centimeters (0.0 to 6.7 inches); brown (10YR 4/3) broken face loam, very dark brown (10YR 2/2) broken face, moist; 35 percent sand; 49 percent silt; 16 percent clay; moderate fine subangular blocky, and moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout and few fine roots throughout and few coarse roots throughout; many very fine irregular and common fine dendritic tubular pores; 0 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.4, pH meter; pH 7.0 (Phenol Red indicator). Lab sample # 16N01303

BA--17 to 39 centimeters (6.7 to 15.4 inches); dark grayish brown (10YR 4/2) broken face loam, very dark brown (10YR 2/2) broken face, moist; 30 percent sand; 46 percent silt; 24 percent clay; moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; common very fine roots throughout and few fine roots throughout and few coarse roots throughout; common very fine dendritic tubular pores; 1 percent faint 10YR 4/2) clay films on all faces of peds; 0 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.4, pH meter; pH 7.2 (Phenol Red indicator). Lab sample # 16N01304

Bt--39 to 72 centimeters (15.4 to 28.3 inches); very dark grayish brown (10YR 3/2) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 25 percent sand; 47 percent silt; 28 percent clay; moderate coarse prismatic parts to moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots throughout and very few fine roots throughout; common very fine dendritic tubular pores; 5 percent faint 10YR 3/2) clay films on all faces of peds; 0 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.4, pH meter; pH 7.4 (Phenol Red indicator). Lab sample # 16N01305

Btb--72 to 100 centimeters (28.3 to 39.4 inches); very dark grayish brown (10YR 3/2) broken face silty clay loam, black (10YR 2/1) broken face, moist; 15 percent sand; 54 percent silt; 31 percent clay; weak medium prismatic parts to moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and common fine roots throughout; common very fine dendritic tubular and few fine dendritic tubular pores; 10 percent faint 10YR 3/2) clay films on all faces of peds; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.7, pH meter; pH 7.6 (Phenol Red indicator). Lab sample # 16N01306

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017

Description Date: Nov 3 2015

Describer: Paul Rindfleisch

NEON Plot ID: STER_035

Site ID: S2015CO075005

Pedon ID: S2015CO075005

Site Note: NEON Sample Site: STER_035

Pedon Note: The soil is mapped as the Wagonwheel-Stoneham complex; 2-5% slopes. The intent was to sample the Colby component in this map unit. The soil pit was described with a coarse-loamy particle size class and showed signs of development in the soil structure in the Bk1 and Bk2 horizons; there currently are no series that fit this pedon.

Lab Source ID: KSSL

Lab Pedon #: 16N0333

Soil Name as Described/Sampled: Colby

Classification: Coarse-loamy, mixed, superactive, mesic Aridic Haplustepts

Soil Name as Correlated:

Classification:

Pedon Type: undefined observation

Pedon Purpose: research site

Taxon Kind: family

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Great Plains Province

Physiographic Section: Colorado Piedmont

State Physiographic Area:

Local Physiographic Area:

Geomorphic Setting: on shoulder of side slope of ridge on rolling plains

Upslope Shape: convex

Cross Slope Shape: linear

Particle Size Control Section: 25 to 100 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 18 cm.
cambic horizon 18 to 62 cm.

Country:

State: Colorado

County: Logan

MLRA: 72 -- Central High Tableland

Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado

Map Unit: 110 -- Wagonwheel-Stoneham complex, 2 to 5 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4695556

Std Longitude: -103.0166389

Latitude: 40 degrees 28 minutes 10.40 seconds north

Longitude: 103 degrees 0 minutes 59.90 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 668139 meters

UTM Northing: 4481766 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Close-grown crop

Existing Vegetation:

Parent Material: eolian deposits

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2015CO075005 **Pedon ID:** S2015CO075005

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	1,363.4	228						well		

Ap--0 to 18 centimeters (0.0 to 7.1 inches); brown (10YR 5/3) broken face loam, dark brown (10YR 3/3) broken face, moist; 42 percent sand; 40 percent silt; 18 percent clay; moderate medium subangular blocky, and moderate coarse subangular blocky, and weak fine granular structure; slightly hard, very friable, nonsticky, nonplastic; common very fine roots throughout and common fine roots throughout; carbonate, finely disseminated throughout; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.1, pH meter; texture high in fine sand; pH 7.8 (Phenol Red indicator); clear wavy boundary. Lab sample # 16N01307

Bk1--18 to 36 centimeters (7.1 to 14.2 inches); brown (10YR 5/3) broken face sandy clay loam, brown (10YR 4/3) broken face, moist; 50 percent sand; 25 percent silt; 25 percent clay; moderate coarse prismatic parts to moderate medium subangular blocky, and moderate coarse prismatic parts to moderate coarse subangular blocky structure; very hard, friable, slightly sticky, nonplastic; few very fine roots throughout; few medium vesicular and few fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 7.6 (Phenol Red indicator); texture high in fine sand; gradual wavy boundary. Lab sample # 16N01308

Bk2--36 to 62 centimeters (14.2 to 24.4 inches); pale brown (10YR 6/3) broken face sandy clay loam, brown (10YR 5/3) broken face, moist; 50 percent sand; 28 percent silt; 22 percent clay; moderate coarse prismatic parts to moderate medium prismatic parts to moderate coarse subangular blocky, and moderate coarse prismatic parts to moderate medium prismatic parts to moderate medium subangular blocky structure; hard, friable, slightly sticky, nonplastic; few very fine roots throughout; few very fine vesicular and few fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine irregular carbonate masses on faces of peds and 3 percent medium irregular carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.2 (Thymol-blue indicator); texture high in fine sand; gradual wavy boundary. Lab sample # 16N01309

C--62 to 100 centimeters (24.4 to 39.4 inches); light yellowish brown (10YR 6/4) broken face fine sandy loam, yellowish brown (10YR 5/4) broken face, moist; 65 percent sand; 25 percent silt; 10 percent clay; massive; soft, very friable, nonsticky, nonplastic; very few very fine roots throughout; few fine vesicular pores; carbonate, finely disseminated throughout; 1 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.3, pH meter; pH 8.2 (Thymol-blue indicator). Lab sample # 16N01310

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017

Description Date: Nov 4 2015

Describer: Paul Rindfleisch

NEON Plot ID: STER_032

Site ID: S2015CO075006

Pedon ID: S2015CO075006

Site Note: NEON Sample Site: STER_032

Pedon Note: The soil is mapped as the Wages loam; 3-5% slopes. The intent was to sample the Wages component in this map unit. The soil pit was described with a fine particle size class and had a calcic horizon; there currently are no series that fit this pedon.

Lab Source ID: KSSL

Lab Pedon #: 16N0334

Soil Name as Described/Sampled: Wages

Classification: Fine, smectitic over carbonatic, mesic Calcidic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: undefined observation

Pedon Purpose: research site

Taxon Kind: family

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 interfluve on rolling plains

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 13 to 41 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 41 cm.
argillic horizon 13 to 41 cm.
calcic horizon 41 to 100 cm.

Country:

State: Colorado

County: Logan

MLRA: 72 -- Central High Tableland

Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado

Map Unit: 119 -- Wages loam, 3 to 5 percent slopes

Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4718889

Std Longitude: -103.0250278

Latitude: 40 degrees 28 minutes 18.80 seconds north

Longitude: 103 degrees 1 minutes 30.10 seconds west

Datum: WGS84

UTM Zone: 13

UTM Easting: 667423 meters

UTM Northing: 4482009 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Close-grown crop

Existing Vegetation:

Parent Material: loess

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2015CO075006 **Pedon ID:** S2015CO075006

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	1,380.1	172						well		

Ap--0 to 13 centimeters (0.0 to 5.1 inches); brown (10YR 5/3) broken face loam, very dark grayish brown (10YR 3/2) broken face, moist; 45 percent sand; 30 percent silt; 25 percent clay; moderate medium subangular blocky, and weak fine granular, and moderate fine subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common very fine roots throughout and few fine roots throughout; few very fine vesicular and few fine vesicular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH meter; texture high in fine sand; pH 7.0 (Phenol Red indicator); clear smooth boundary. Lab sample # 16N01311

Bt1--13 to 20 centimeters (5.1 to 7.9 inches); grayish brown (10YR 5/2) broken face clay loam, very dark brown (10YR 2/2) broken face, moist; 30 percent sand; 40 percent silt; 30 percent clay; moderate coarse subangular blocky, and moderate medium subangular blocky structure; hard, friable, moderately sticky, slightly plastic; common very fine roots throughout and very few fine roots throughout; few very fine vesicular and common fine vesicular pores; 40 percent distinct clay films on all faces of peds; 1 percent nonflat rounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.1, pH meter; pH 7.0 (Phenol Red indicator); clear wavy boundary. Lab sample # 16N01312

Bt2--20 to 41 centimeters (7.9 to 16.1 inches); dark grayish brown (10YR 4/2) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 25 percent sand; 38 percent silt; 37 percent clay; strong coarse prismatic parts to strong medium prismatic parts to strong fine angular blocky, and strong coarse prismatic parts to strong medium prismatic parts to strong medium angular blocky, and strong coarse prismatic parts to strong medium prismatic parts to strong coarse angular blocky, and strong coarse prismatic parts to strong medium prismatic parts to strong fine prismatic parts to strong fine angular blocky, and strong coarse prismatic parts to strong medium prismatic parts to strong fine prismatic parts to strong medium angular blocky, and strong coarse prismatic parts to strong medium prismatic parts to strong fine prismatic parts to strong coarse angular blocky structure; very hard, firm, moderately sticky, very plastic; few very fine roots throughout; few very fine vesicular and few medium vesicular and few fine vesicular pores; 80 percent prominent clay films on all faces of peds; 1 percent nonflat rounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.3, pH meter; pH 7.2 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01313

Bk--41 to 72 centimeters (16.1 to 28.3 inches); light gray (10YR 7/2) broken face loam, light yellowish brown (2.5Y 6/3) broken face, moist; 27 percent sand; 48 percent silt; 25 percent clay; weak coarse prismatic, and moderate medium subangular blocky, and moderate coarse subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; very few very fine roots throughout; few fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike carbonate masses on faces of peds; 1 percent nonflat rounded indurated 2 to 5-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.4 (Thymol-blue indicator); texture high in very fine sand; gradual wavy boundary. Lab sample # 16N01314

C1--72 to 92 centimeters (28.3 to 36.2 inches); light gray (10YR 7/2) broken face loam, brown (10YR 5/3) broken face, moist; 35 percent sand; 47 percent silt; 18 percent clay; massive; soft, very friable, slightly sticky, nonplastic; few fine vesicular pores; carbonate, finely disseminated throughout; 1 percent nonflat rounded indurated 2 to 5-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; very strongly alkaline, pH 9.1, pH meter; texture high in very fine sand; pH 8.6 (Thymol-blue indicator); clear wavy boundary. Lab sample # 16N01315

2C2--92 to 100 centimeters (36.2 to 39.4 inches); very pale brown (10YR 7/4) broken face clay loam, light yellowish brown (10YR 6/4) broken face, moist; 40 percent sand; 28 percent silt; 32 percent clay; massive; slightly hard, friable, very sticky, moderately plastic; common very fine vesicular and few medium vesicular and common fine vesicular pores; carbonate, finely disseminated throughout and 5 percent coarse irregular carbonate masses on faces of peds and 5 percent medium irregular carbonate masses on faces of peds; 5 percent nonflat rounded indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; very strongly alkaline, pH 9.1, pH meter; pH 8.6 (Thymol-blue indicator). Lab sample # 16N01316

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 4 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_028
Site ID: S2015CO075007

Pedon ID: S2015CO075007
Site Note: NEON Sample Site: STER_028
Pedon Note: The soil is mapped as the Weld loam; 1-3% slopes. The intent was to sample the Weld component in this map unit. The soil pit was described as a Paleustoll and with a calcic horizon; this correlates to the Platner series.
Lab Source ID: KSSL
Lab Pedon #: 16N0335
Soil Name as Described/Sampled: Platner
Classification: Fine, smectitic, mesic Aridic Paleustolls

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 interfluve on rolling plains
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 18 to 61 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 43 cm.
argillic horizon 18 to 61 cm.
calcic horizon 61 to 100 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 126 -- Weld loam, 1 to 3 percent slopes
Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4731111
Std Longitude: -103.0185000

Latitude: 40 degrees 28 minutes 23.20 seconds north
Longitude: 103 degrees 1 minutes 6.60 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 667972 meters
UTM Northing: 4482156 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Close-grown crop
Existing Vegetation:
Parent Material: loess
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015CO075007 **Pedon ID:** S2015CO075007

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	1,364.0	130						well		

Ap--0 to 18 centimeters (0.0 to 7.1 inches); brown (10YR 5/3) broken face loam, very dark grayish brown (10YR 3/2) broken face, moist; 45 percent sand; 37 percent silt; 18 percent clay; weak fine granular, and weak medium subangular blocky, and weak fine subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common very fine roots throughout and few fine roots throughout; few fine vesicular pores; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter; texture high in fine sand; pH 7.3 (Phenol Red indicator); clear wavy boundary. Lab sample # 16N01317

Bt1--18 to 43 centimeters (7.1 to 16.9 inches); brown (10YR 4/3) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 30 percent sand; 33 percent silt; 37 percent clay; strong coarse prismatic parts to strong medium angular blocky, and strong medium prismatic parts to strong fine angular blocky structure; very hard, firm, moderately sticky, very plastic; common very fine roots throughout and very few fine roots throughout; common very fine vesicular and few fine vesicular pores; 50 percent prominent 10YR 2/2) clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.2, pH meter; pH 7.4 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01318

Bt2--43 to 61 centimeters (16.9 to 24.0 inches); brown (10YR 5/3) broken face clay loam, brown (10YR 4/3) broken face, moist; 22 percent sand; 43 percent silt; 35 percent clay; moderate coarse prismatic parts to moderate coarse subangular blocky, and moderate coarse prismatic parts to moderate medium subangular blocky structure; very hard, friable, very sticky, very plastic; few very fine roots throughout; few very fine vesicular and few fine vesicular pores; 10 percent distinct 10YR 2/2) clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.3, pH meter; pH 7.4 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01319

Bk--61 to 100 centimeters (24.0 to 39.4 inches); pale brown (10YR 6/3) broken face loam, brown (10YR 5/3) broken face, moist; 35 percent sand; 40 percent silt; 25 percent clay; moderate medium subangular blocky, and moderate coarse subangular blocky structure; slightly hard, very friable, moderately sticky, slightly plastic; very few very fine roots throughout; few very fine vesicular and few fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.6 (Thymol-blue indicator). Lab sample # 16N01320

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 5 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_018
Site ID: S2015CO075008

Pedon ID: S2015CO075008
Site Note: NEON Sample Site: STER_018
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0336
Soil Name as Described/Sampled: Weld
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 footslope of base slope of interfluve on rolling plains
Upslope Shape: concave
Cross Slope Shape: linear
Particle Size Control Section: 11 to 43 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 43 cm.
argillic horizon 11 to 43 cm.
secondary carbonates 43 to 100 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 92 -- Rago loam, 0 to 3 percent slopes
Pit Location:
Quad Name: Buffalo Springs Ranch NE, Colorado
Std Latitude: 40.4651389
Std Longitude: -103.0347222

Latitude: 40 degrees 27 minutes 54.50 seconds north
Longitude: 103 degrees 2 minutes 5.00 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 666617 meters
UTM Northing: 4481240 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Row crop
Existing Vegetation:
Parent Material: alluvium and/or eolian deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015CO075008 **Pedon ID:** S2015CO075008

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	1,363.4	215						well		

Ap--0 to 11 centimeters (0.0 to 4.3 inches); dark grayish brown (10YR 4/2) broken face clay loam, very dark brown (10YR 2/2) broken face, moist; 35 percent sand; 35 percent silt; 30 percent clay; weak medium subangular blocky, and weak fine subangular blocky, and weak fine granular structure; soft, friable, moderately sticky, moderately plastic; common very fine roots throughout and few fine roots throughout; few fine vesicular pores; 1 percent nonflat rounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; moderately acid, pH 5.8, pH meter; texture high in fine sand; pH 6.2 (Chlorophenol Red indicator); clear smooth boundary. Lab sample # 16N01321

Bt1--11 to 21 centimeters (4.3 to 8.3 inches); very dark grayish brown (10YR 3/2) broken face clay loam, very dark brown (10YR 2/2) broken face, moist; 30 percent sand; 34 percent silt; 36 percent clay; weak medium prismatic, and moderate medium angular blocky, and moderate coarse angular blocky structure; very hard, firm, moderately sticky, very plastic; few very fine roots throughout and very few fine roots throughout; common very fine vesicular and common fine vesicular pores; 20 percent distinct clay films on vertical faces of peds; 3 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 6.6, pH meter; pH 7.0 (Phenol Red indicator); clear wavy boundary. Lab sample # 16N01322

Bt2--21 to 43 centimeters (8.3 to 16.9 inches); brown (10YR 4/3) broken face clay loam, very dark grayish brown (10YR 3/2) broken face, moist; 30 percent sand; 34 percent silt; 36 percent clay; strong coarse prismatic parts to moderate medium angular blocky, and strong medium prismatic parts to moderate fine angular blocky structure; very hard, firm, moderately sticky, very plastic; few very fine roots throughout and very few fine roots throughout; common very fine vesicular and few medium vesicular and common fine vesicular pores; 50 percent prominent clay films on vertical faces of peds; 1 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH meter; pH 7.2 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01323

Bk1--43 to 85 centimeters (16.9 to 33.5 inches); pale brown (10YR 6/3) broken face loam, brown (10YR 4/3) broken face, moist; 35 percent sand; 43 percent silt; 22 percent clay; moderate coarse prismatic parts to moderate coarse subangular blocky, and moderate coarse prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; few very fine roots throughout and very few fine roots throughout; few very fine vesicular and few fine vesicular pores; 2 percent fine threadlike carbonate masses on faces of peds and 1 percent fine irregular carbonate masses on bottom of rock fragments; 1 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; pH 8.0 (Thymol-blue indicator); gradual wavy boundary. Lab sample # 16N01324

Bk2--85 to 100 centimeters (33.5 to 39.4 inches); brown (10YR 5/3) broken face loam, brown (10YR 4/3) broken face, moist; 35 percent sand; 47 percent silt; 18 percent clay; weak coarse subangular blocky, and weak medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; few very fine roots throughout and very few fine roots throughout; few very fine vesicular pores; 1 percent fine irregular carbonate masses on faces of peds and 1 percent fine irregular carbonate masses on bottom of rock fragments; 2 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.2 (Thymol-blue indicator). Lab sample # 16N01325

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 5 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_006
Site ID: S2015CO075009

Pedon ID: S2015CO075009
Site Note: NEON Sample Site: STER_006
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0337
Soil Name as Described/Sampled: Sampson
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: swale on rolling plains
Upslope Shape: concave
Cross Slope Shape: concave
Particle Size Control Section: 11 to 57 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 57 cm.
argillic horizon 11 to 57 cm.
calcic horizon 57 to 100 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 92 -- Rago loam, 0 to 3 percent slopes
Pit Location:
Quad Name: Buffalo Springs Ranch NE, Colorado
Std Latitude: 40.4637778
Std Longitude: -103.0351944

Latitude: 40 degrees 27 minutes 49.60 seconds north
Longitude: 103 degrees 2 minutes 6.70 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 666580 meters
UTM Northing: 4481088 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Row crop
Existing Vegetation:
Parent Material: alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments: 8.0 percent nonflat subrounded indurated 2- to 75-millimeter Mixed rock fragments

Description database: KSSL

Cont. Site ID: S2015CO075009 **Pedon ID:** S2015CO075009

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	1,362.2	96						well		

Ap--0 to 11 centimeters (0.0 to 4.3 inches); dark grayish brown (10YR 4/2) broken face loam, very dark brown (10YR 2/2) broken face, moist; 35 percent sand; 39 percent silt; 26 percent clay; moderate medium subangular blocky, and moderate fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine roots throughout and few fine roots throughout; common very fine vesicular pores; 2 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH meter; pH 6.4 (Chlorophenol Red indicator); clear smooth boundary. Lab sample # 16N01326

Bt--11 to 35 centimeters (4.3 to 13.8 inches); very dark grayish brown (10YR 3/2) broken face clay loam, very dark brown (10YR 2/2) broken face, moist; 25 percent sand; 42 percent silt; 33 percent clay; moderate coarse prismatic parts to moderate medium angular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and very few fine roots throughout; common very fine vesicular and few fine vesicular pores; 40 percent distinct 10YR 3/2) clay films on vertical faces of peds; 5 percent nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH meter; pH 7.0 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01327

Btk--35 to 72 centimeters (13.8 to 28.3 inches); grayish brown (10YR 5/2) broken face clay loam, dark brown (10YR 3/3) broken face, moist; 25 percent sand; 42 percent silt; 33 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and very few fine roots throughout; few very fine vesicular pores; 1 percent prominent carbonate coats on rock fragments and 35 percent faint 10YR 4/3) clay films on vertical faces of peds; carbonate, finely disseminated throughout; 3 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; slightly alkaline, pH 7.7, pH meter; pH 8.0 (Thymol-blue indicator); gradual wavy boundary. Lab sample # 16N01328

Bk--72 to 100 centimeters (28.3 to 39.4 inches); pale brown (10YR 6/3) broken face clay loam, brown (10YR 4/3) broken face, moist; 30 percent sand; 37 percent silt; 33 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine roots throughout; few very fine vesicular and few fine vesicular pores; 2 percent faint 10YR 5/3) clay films on surfaces along root channels; carbonate, finely disseminated throughout and 5 percent fine threadlike carbonate masses in matrix; 2 percent nonflat subrounded indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH meter; pH 8.2 (Thymol-blue indicator). Lab sample # 16N01329

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 5 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_010
Site ID: S2015CO075010

Pedon ID: S2015CO075010
Site Note: NEON Sample Site: STER_010 (Tower Site)
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0338
Soil Name as Described/Sampled: Rago
Classification: Fine, smectitic, 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: on footslope of base slope of interfluve on rolling plains
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 75 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 100 cm.
argillic horizon 25 to 86 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 126 -- Weld loam, 1 to 3 percent slopes
Pit Location:
Quad Name: Buffalo Springs Ranch NE, Colorado
Std Latitude: 40.4607500
Std Longitude: -103.0302778

Latitude: 40 degrees 27 minutes 38.70 seconds north
Longitude: 103 degrees 1 minutes 49.00 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 667004 meters
UTM Northing: 4480761 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Row crop
Existing Vegetation:
Parent Material: alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015CO075010 **Pedon ID:** S2015CO075010

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	1,368.2	310						well		

Ap1--0 to 12 centimeters (0.0 to 4.7 inches); dark grayish brown (10YR 4/2) broken face clay loam, very dark brown (10YR 2/2) broken face, moist; 25 percent sand; 37 percent silt; 38 percent clay; very hard, firm, very sticky, very plastic; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; pH 7.0 (Phenol Red indicator). Lab sample # 16N01330

Ap2--12 to 25 centimeters (4.7 to 9.8 inches); very dark grayish brown (10YR 3/2) broken face silty clay loam, very dark brown (10YR 2/2) broken face, moist; 17 percent sand; 51 percent silt; 32 percent clay; hard, friable, very sticky, very plastic; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; pH 7.0 (Phenol Red indicator). Lab sample # 16N01331

Bt1--25 to 47 centimeters (9.8 to 18.5 inches); dark grayish brown (10YR 4/2) broken face silty clay loam, very dark brown (10YR 2/2) broken face, moist; 17 percent sand; 45 percent silt; 38 percent clay; very hard, firm, very sticky, very plastic; clay films; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; pH 7.2 (Phenol Red indicator). Lab sample # 16N01332

Bt2--47 to 86 centimeters (18.5 to 33.9 inches); dark grayish brown (10YR 4/2) broken face silty clay, very dark brown (10YR 2/2) broken face, moist; 17 percent sand; 41 percent silt; 42 percent clay; extremely hard, firm, very sticky, very plastic; clay films; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; pH 7.2 (Phenol Red indicator). Lab sample # 16N01333

BC--86 to 100 centimeters (33.9 to 39.4 inches); dark grayish brown (10YR 4/2) broken face silty clay loam, very dark brown (10YR 2/2) broken face, moist; 17 percent sand; 45 percent silt; 38 percent clay; extremely hard, firm, very sticky, very plastic; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH meter; pH 7.3 (Phenol Red indicator). Lab sample # 16N01334

PEDON DESCRIPTION -- NEON Site STER

Print Date: Sep 3 2017
Description Date: Nov 6 2015
Describer: Paul Rindfleisch
NEON Plot ID: STER_005
Site ID: S2015CO075011

Pedon ID: S2015CO075011
Site Note: NEON Sample Site: STER_005
Pedon Note: The soil is mapped as Weld loam; 1-3% slopes. The intent was to sample the Weld component in this map unit. The soil pit was described with a calcic horizon; there currently are no series that fit this pedon.
Lab Source ID: KSSL
Lab Pedon #: 16N0339
Soil Name as Described/Sampled: Weld
Classification: Fine, smectitic, mesic Calcidic Argiustolls

Soil Name as Correlated:

Classification:
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: family
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 interfluve on rolling plains
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 18 to 58 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 42 cm.
argillic horizon 18 to 58 cm.
calcic horizon 58 to 100 cm.

Country:
State: Colorado
County: Logan
MLRA: 72 -- Central High Tableland
Soil Survey Area: CO075 -- Logan County, Colorado
5-FTM -- Fort Morgan, Colorado
Map Unit: 126 -- Weld loam, 1 to 3 percent slopes
Pit Location:

Quad Name: Buffalo Springs Ranch NE, Colorado

Std Latitude: 40.4607778
Std Longitude: -103.0331667

Latitude: 40 degrees 27 minutes 38.80 seconds north
Longitude: 103 degrees 1 minutes 59.40 seconds west
Datum: WGS84
UTM Zone: 13
UTM Easting: 666760 meters
UTM Northing: 4480759 meters

Primary Earth Cover: Crop cover
Secondary Earth Cover: Row crop
Existing Vegetation:
Parent Material: loess
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015CO075011 **Pedon ID:** S2015CO075011

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	1,380.4	344						well		

Ap--0 to 18 centimeters (0.0 to 7.1 inches); brown (10YR 5/3) broken face loam, very dark grayish brown (10YR 3/2) broken face, moist; 40 percent sand; 37 percent silt; 23 percent clay; moderate medium subangular blocky, and moderate fine subangular blocky, and weak fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots throughout and few medium roots throughout and few fine roots throughout; few very fine vesicular pores; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.4, pH meter; pH 7.0 (Phenol Red indicator); clear smooth boundary. Lab sample # 16N01335

Bt1--18 to 42 centimeters (7.1 to 16.5 inches); dark grayish brown (10YR 4/2) broken face clay, very dark gray (10YR 3/1) broken face, moist; 23 percent sand; 35 percent silt; 42 percent clay; strong coarse prismatic parts to strong medium angular blocky, and strong medium prismatic parts to strong fine angular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots throughout and very few medium roots throughout and few fine roots throughout; common very fine vesicular and few fine vesicular pores; 70 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH meter; pH 7.0 (Phenol Red indicator); clear wavy boundary. Lab sample # 16N01336

Bt2--42 to 58 centimeters (16.5 to 22.8 inches); brown (10YR 5/3) broken face silty clay loam, dark grayish brown (10YR 4/2) broken face, moist; 18 percent sand; 49 percent silt; 33 percent clay; moderate coarse prismatic parts to moderate medium prismatic parts to moderate coarse angular blocky, and moderate coarse prismatic parts to moderate medium prismatic parts to moderate medium angular blocky structure; moderately hard, firm, very sticky, very plastic; few very fine roots throughout and very few fine roots throughout; few very fine vesicular and few fine vesicular pores; 10 percent distinct clay films on vertical faces of peds; noneffervescent, by HCl, 1 normal; neutral, pH 7.3, pH meter; pH 7.2 (Phenol Red indicator); gradual wavy boundary. Lab sample # 16N01337

Bk--58 to 90 centimeters (22.8 to 35.4 inches); very pale brown (10YR 7/3) broken face silt loam, brown (10YR 5/3) broken face, moist; 20 percent sand; 57 percent silt; 23 percent clay; weak coarse prismatic parts to moderate coarse subangular blocky, and weak coarse prismatic parts to moderate medium subangular blocky structure; slightly hard, very friable, moderately sticky, slightly plastic; very few very fine roots throughout; few very fine vesicular and few medium vesicular and few fine vesicular pores; carbonate, finely disseminated throughout and 2 percent fine threadlike carbonate masses on faces of peds; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.2, pH meter; pH 8.6 (Thymol-blue indicator); gradual wavy boundary. Lab sample # 16N01338

C--90 to 100 centimeters (35.4 to 39.4 inches); light gray (10YR 7/2) broken face silt loam, pale brown (10YR 6/3) broken face, moist; 25 percent sand; 61 percent silt; 14 percent clay; massive; soft, very friable, moderately sticky, nonplastic; very few very fine roots throughout; few fine vesicular pores; carbonate, finely disseminated throughout and 1 percent fine irregular carbonate masses around rock fragments; 1 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.4, pH meter; pH 8.8 (Thymol-blue indicator). Lab sample # 16N01339