

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 1 2018

Describer: Brian Nester

NEON Plot ID: KONA_003

Site ID: S2018KS161003

Pedon ID: S2018KS161003

Site Note: plotID: KONA_003 distance: 10.0 azimuth: 35 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Smolan series because the dark surface has been eroded and no longer meets the Pachic requirement.

Lab Source ID: KSSL

Lab Pedon #: 18N94849

Soil Name as Described/Sampled: Smolan

Classification: Fine, smectitic, mesic Udic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 14 to 64 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 37 cm.
argillic horizon 14 to 100 cm.
secondary carbonates 37 to 100 cm.
redox concentrations 66 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3923 -- Smolan silty clay loam, 3 to 7 percent slopes, eroded

Pit Location: plotID: KONA_003 distance: 10.0 azimuth: 35 reference point: 40x40 SW marker measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2150000

Std Longitude: -96.5990000

Latitude: 39 degrees 12 minutes 53.89 seconds north

Longitude: 96 degrees 35 minutes 56.40 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707288 meters

UTM Northing: 4343383 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: S2018KS161003

Pedon ID: S2018KS161003

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	335.0	235						moderately well		

Ap--0 to 14 centimeters (0.0 to 5.5 inches); silty clay loam, very dark grayish brown (10YR 3/2) interior, moist; 38 percent clay; weak medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 2 percent nonflat subangular indurated 2 to 20-millimeter Cherty limestone fragments; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04383. rock fragments in this horizon appear to be an anthropogenic feature since we didn't see any fragments lower in the profile

Bt--14 to 37 centimeters (5.5 to 14.6 inches); silty clay loam, dark brown (10YR 3/3) interior, moist; 36 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 30 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04384

Btk1--37 to 66 centimeters (14.6 to 26.0 inches); silty clay, brown (10YR 4/3) interior, moist; 42 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 3 percent distinct pressure faces on all faces of peds and 25 percent distinct clay films on all faces of peds; 2 percent fine prominent spherical moderately cemented 10YR 8/1), moist, carbonate nodules with clear boundaries in matrix and 1 percent medium prominent spherical moderately cemented 10YR 8/1), moist, carbonate nodules with clear boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04385

Btk2--66 to 100 centimeters (26.0 to 39.4 inches); silty clay loam, dark yellowish brown (10YR 4/4) interior, moist; 34 percent clay; moderate medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 3 percent distinct pressure faces on all faces of peds and 25 percent distinct clay films on all faces of peds; 2 percent fine distinct spherical 7.5YR 4/6), moist, masses of oxidized iron with clear boundaries In matrix; 1 percent fine prominent spherical moderately cemented 10YR 8/1), moist, carbonate nodules with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04386

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 2 2018

Describer: Brian Nester

NEON Plot ID: KONA_004

Site ID: S2018KS161004

Pedon ID: S2018KS161004

Site Note: plotID: KONA_004 distance: 4.3 azimuth: 230 reference point: 20x20 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to Wymore because it is in an udic ustic soil moisture regime.

Lab Source ID: KSSL

Lab Pedon #: 18N94852

Soil Name as Described/Sampled: Wymore

Classification: Fine, smectitic, mesic Aquertic Argiudolls

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: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 26 to 76 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 24 cm.
redox concentrations 12 to 24 cm.
argillic horizon 24 to 100 cm.
slickensides 62 to 100 cm.
redox depletions with chroma 2 or less 77 to 100 cm.
secondary carbonates 77 to 100 cm.
episaturation 77 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 7680 -- Wymore silty clay loam, 0 to 1 percent slopes

Pit Location: plotID: KONA_004 distance: 4.3 azimuth: 230 reference point: 20x20 SW marker measurement location: pit center

Quad Name: Ogden, Kansas

Std Latitude: 39.1241500

Std Longitude: -96.6380600

Latitude: 39 degrees 7 minutes 26.84 seconds north

Longitude: 96 degrees 38 minutes 17.02 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 704179 meters

UTM Northing: 4333210 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

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	326.0	350						moderately well		

Ap1--0 to 12 centimeters (0.0 to 4.7 inches); very dark brown (10YR 2/2) interior silty clay loam; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04397

Ap2--12 to 24 centimeters (4.7 to 9.4 inches); very dark brown (10YR 2/2) interior silty clay loam; 32 percent clay; moderate medium subangular blocky parts to moderate fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent fine faint spherical weakly cemented (10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04398

Bt--24 to 62 centimeters (9.4 to 24.4 inches); yellowish brown (10YR 5/4) interior silty clay loam; 37 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 35 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04399

Btss--62 to 77 centimeters (24.4 to 30.3 inches); light olive brown (2.5Y 5/3) interior silty clay; 41 percent clay; moderate medium prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 10 percent prominent slickensides (pedogenic) on slickensides and 85 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04400

Btkss--77 to 100 centimeters (30.3 to 39.4 inches); light yellowish brown (2.5Y 6/3) interior silty clay; 43 percent clay; moderate coarse prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent distinct slickensides (pedogenic) on slickensides and 55 percent distinct clay films on all faces of peds; 3 percent fine faint irregular (10YR 6/2), moist, masses of reduced iron with clear boundaries in matrix; 7 percent medium distinct irregular weakly cemented (10YR 8/1), moist, carbonate nodules with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04401

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 9 2018

Describer: Brian Nester

NEON Plot ID: KONA_005

Site ID: S2018KS161005

Pedon ID: S2018KS161005

Site Note: plotID: KONA_005 distance: 6.7 azimuth: 50 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Kahola series because it has a fine PSC instead of fine-silty and has an argillic subsurface diagnostic horizon at 77cm.

Lab Source ID: KSSL

Lab Pedon #: 18N94860

Soil Name as Described/Sampled: Kahola

Classification: Fine, mixed, superactive, mesic Pachic Argiudolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on toeslope of base slope of drainageway on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 77 to 100 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 77 cm.
redox concentrations 35 to 100 cm.
lithologic discontinuity 77 to 77 cm.
argillic horizon 77 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 4400 -- Kahola silt loam, rarely flooded

Pit Location: plotID: KONA_005 distance: 6.7
azimuth: 50 reference point: 40x40 SW marker
measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2214700

Std Longitude: -96.5828200

Latitude: 39 degrees 13 minutes 17.18 seconds
north

Longitude: 96 degrees 34 minutes 58.15 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 708666 meters

UTM Northing: 4344138 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

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	317.0	212						moderately well		

Ap--0 to 7 centimeters (0.0 to 2.8 inches); very dark brown (10YR 2/2) interior silty clay loam, very dark grayish brown (10YR 3/2) interior, dry; 27 percent clay; weak medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; common very fine dendritic tubular and common medium dendritic tubular pores; 1 percent nonflat subrounded indurated 2 to 20-millimeter Limestone fragments; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04434

BA--7 to 35 centimeters (2.8 to 13.8 inches); very dark brown (10YR 2/2) interior silty clay loam, very dark grayish brown (10YR 3/2) interior, dry; 29 percent clay; moderate medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 1 percent nonflat subrounded indurated 2 to 20-millimeter Cherty limestone fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04435

Bw1--35 to 58 centimeters (13.8 to 22.8 inches); very dark grayish brown (10YR 3/2) interior silty clay loam, dark grayish brown (10YR 4/2) interior, dry; 30 percent clay; moderate medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 1 percent fine distinct spherical 10YR 4/4), moist, masses of oxidized iron with diffuse boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04436

Bw2--58 to 77 centimeters (22.8 to 30.3 inches); very dark grayish brown (10YR 3/2) interior silty clay loam, dark grayish brown (10YR 4/2) interior, dry; 31 percent clay; moderate medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 1 percent fine distinct spherical 10YR 4/4), moist, masses of oxidized iron with diffuse boundaries in matrix; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04437

2Bt--77 to 100 centimeters (30.3 to 39.4 inches); dark grayish brown (10YR 4/2) interior silty clay, grayish brown (10YR 5/2) interior, dry; 41 percent clay; moderate medium prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 30 percent distinct clay films on all faces of peds; 1 percent fine faint spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with clear boundaries in matrix and 5 percent fine prominent spherical 7.5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04438

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 1 2018

Describer: Brian Nester

NEON Plot ID: KONA_008

Site ID: S2018KS161008

Pedon ID: S2018KS161008

Site Note: plotID: KONA_008 distance: 5.7 azimuth: 130 reference point: 40x40 NW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Smolan series because the dark surface has been eroded and no longer meets a mollic epipedon.

Lab Source ID: KSSL

Lab Pedon #: 18N94848

Soil Name as Described/Sampled: Smolan

Classification: Fine, smectitic, mesic Udic Haplustalfs

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on shoulder of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: convex

Particle Size Control Section: 15 to 65 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 15 cm.
argillic horizon 15 to 100 cm.
slickensides 48 to 100 cm.
lithologic discontinuity 65 to 65 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3919 -- Smolan silt loam, 1 to 3 percent slopes

Pit Location: plotID: KONA_008 distance: 5.7
azimuth: 130 reference point: 40x40 NW marker
measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2172400

Std Longitude: -96.6010400

Latitude: 39 degrees 13 minutes 1.96 seconds
north

Longitude: 96 degrees 36 minutes 3.74 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707106 meters

UTM Northing: 4343627 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Row crop

Existing Vegetation:

Parent Material: loess over colluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2018KS161008

Pedon ID: S2018KS161008

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	346.0	210						well		

Ap--0 to 15 centimeters (0.0 to 5.9 inches); brown (7.5YR 4/2) interior silty clay loam, very dark brown (7.5YR 2/2) interior, moist; 33 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common fine roots throughout; common fine dendritic tubular pores; 5 percent distinct pressure faces on all faces of peds; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04378

Bt--15 to 48 centimeters (5.9 to 18.9 inches); silty clay, brown (7.5YR 4/4) interior, moist; 45 percent clay; strong medium subangular blocky structure; hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 7 percent faint clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04379

Btss1--48 to 65 centimeters (18.9 to 25.6 inches); silty clay, strong brown (7.5YR 5/6) interior, moist; 43 percent clay; strong medium wedge structure; hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 10 percent prominent slickensides (pedogenic) on slickensides and 85 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; gradual smooth boundary. Lab sample # 18N04380

2Btss2--65 to 78 centimeters (25.6 to 30.7 inches); silty clay, strong brown (7.5YR 5/6) interior, moist; 40 percent clay; strong medium wedge structure; hard, very firm, very sticky, very plastic; semideformable; common fine roots throughout; common fine dendritic tubular pores; 10 percent prominent slickensides (pedogenic) on slickensides and 90 percent prominent clay films on all faces of peds; 5 percent flat subangular indurated 2 to 20-millimeter Chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04381

2Btss3--78 to 100 centimeters (30.7 to 39.4 inches); channery silty clay loam, strong brown (7.5YR 5/6) interior, moist; 38 percent clay; strong medium wedge structure; hard, very firm, very sticky, very plastic; semideformable; 10 percent prominent slickensides (pedogenic) on slickensides and 98 percent prominent clay films on all faces of peds; 5 percent flat subangular indurated 2 to 5-millimeter Chert fragments and 10 percent flat subangular indurated 20 to 75-millimeter Chert fragments; noneffervescent, by HCl, 1 normal. Lab sample # 18N04382

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 7 2018

Describer: Brian Nester

NEON Plot ID: KONA_011

Site ID: S2018KS161011

Pedon ID: S2018KS161011

Site Note: plotID: KONA_011 distance: 5.1 azimuth: 210 reference point: 20x20 SW marker measurement location: pit center

Pedon Note:

Lab Source ID: KSSL

Lab Pedon #: 18N94859

Soil Name as Described/Sampled: Reading

Classification: Fine-silty, mixed, superactive, mesic Pachic Argiudolls

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: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on tread of stream terrace on river valley

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 28 to 78 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 73 cm.
argillic horizon 28 to 100 cm.
redox concentrations 28 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 7170 -- Reading silt loam, rarely flooded

Pit Location: plotID: KONA_011 distance: 5.1
azimuth: 210 reference point: 20x20 SW marker
measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2230000

Std Longitude: -96.5955700

Latitude: 39 degrees 13 minutes 22.69 seconds
north

Longitude: 96 degrees 35 minutes 44.05 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707561 meters

UTM Northing: 4344279 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

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	327.0	350						moderately well		

Ap1--0 to 10 centimeters (0.0 to 3.9 inches); very dark brown (10YR 2/2) interior silt loam, very dark grayish brown (10YR 3/2) interior, dry; 24 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; deformable; many fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04429

Ap2--10 to 28 centimeters (3.9 to 11.0 inches); black (10YR 2/1) interior silty clay loam, very dark grayish brown (10YR 3/2) interior, dry; 29 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; deformable; common fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04430

Bt1--28 to 52 centimeters (11.0 to 20.5 inches); dark brown (7.5YR 3/2) interior silty clay loam, brown (7.5YR 4/3) interior, dry; 33 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; semideformable; common fine roots throughout; common fine dendritic tubular pores; 15 percent prominent 7.5YR 3/2), moist, clay films on all faces of peds; 10 percent fine prominent spherical 7.5YR 4/4), moist, masses of oxidized iron with clear boundaries in matrix; 1 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04431

Bt2--52 to 73 centimeters (20.5 to 28.7 inches); dark brown (7.5YR 3/3) interior silty clay loam, brown (7.5YR 4/4) interior, dry; 34 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; semideformable; common fine roots throughout; common fine dendritic tubular pores; 30 percent prominent 7.5YR 3/2), moist, clay films on all faces of peds; 2 percent fine faint spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix and 20 percent medium distinct spherical 7.5YR 5/4), moist, masses of oxidized iron with clear boundaries in matrix; 2 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04432

Bt3--73 to 100 centimeters (28.7 to 39.4 inches); dark brown (7.5YR 3/4) interior silty clay loam, brown (7.5YR 4/4) interior, dry; 37 percent clay; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common fine roots throughout; common fine dendritic tubular pores; 40 percent prominent 7.5YR 3/3), moist, clay films on all faces of peds and 50 percent prominent 10YR 5/3), moist, silt coats on vertical faces of peds; 5 percent fine prominent spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with clear boundaries in matrix and 20 percent medium distinct spherical 7.5YR 5/6), moist, masses of oxidized iron with clear boundaries in matrix; 5 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal. Lab sample # 18N04433

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 2 2018

Describer: Brian Nester

NEON Plot ID: KONA_013

Site ID: S2018KS161013

Pedon ID: S2018KS161013

Site Note: plotID: KONA_013 distance: 7.0 azimuth: 44 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Wymore series because it has a fine-silty PSC instead of fine and does not meet the criteria for Aquertic.

Lab Source ID: KSSL

Lab Pedon #: 18N94851

Soil Name as Described/Sampled: Wymore

Classification: Fine-silty, smectitic, mesic Typic Argiudolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 28 to 78 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 28 cm.
argillic horizon 28 to 100 cm.
slickensides 62 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3919 -- Smolan silt loam, 1 to 3 percent slopes

Pit Location: plotID: KONA_013 distance: 7.0
azimuth: 44 reference point: 40x40 SW marker
measurement location: pit center

Quad Name: Keats, Kansas

Std Latitude: 39.1265100

Std Longitude: -96.6420700

Latitude: 39 degrees 7 minutes 35.34 seconds
north

Longitude: 96 degrees 38 minutes 31.45 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 703825 meters

UTM Northing: 4333463 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: S2018KS161013

Pedon ID: S2018KS161013

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	334.0	100						well		

Ap1--0 to 15 centimeters (0.0 to 5.9 inches); very dark brown (10YR 2/2) interior silt loam; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04392

Ap2--15 to 28 centimeters (5.9 to 11.0 inches); black (10YR 2/1) interior silty clay loam; 28 percent clay; moderate medium subangular blocky parts to moderate fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; common very fine dendritic tubular pores; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04393

Bt--28 to 62 centimeters (11.0 to 24.4 inches); brown (10YR 4/3) interior silty clay loam; 32 percent clay; moderate medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 40 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04394

Btss1--62 to 86 centimeters (24.4 to 33.9 inches); brown (10YR 5/3) interior silty clay loam; 37 percent clay; moderate medium prismatic parts to weak medium wedge structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 3 percent faint slickensides (pedogenic) on slickensides and 75 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04395

Btss2--86 to 100 centimeters (33.9 to 39.4 inches); light yellowish brown (2.5Y 6/3) interior silty clay loam; 34 percent clay; strong medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine dendritic tubular pores; 3 percent faint slickensides (pedogenic) on slickensides and 85 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal. Lab sample # 18N04396

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 2 2018

Describer: Brian Nester

NEON Plot ID: KONA_016

Site ID: S2018KS161016

Pedon ID: S2018KS161016

Site Note: plotID: KONA_016 distance: 5.4 azimuth: 43 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Reading series because the dark surface has been eroded and no longer meets the Pachic requirement.

Lab Source ID: KSSL

Lab Pedon #: 18N94854

Soil Name as Described/Sampled: Reading

Classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on tread of stream terrace on river valley

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 33 to 83 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 33 cm.
argillic horizon 33 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 7213 -- Reading silt loam, moderately wet, very rarely flooded

Pit Location: plotID: KONA_016 distance: 5.4 azimuth: 43 reference point: 40x40 SW marker measurement location: pit center

Quad Name: Ogden, Kansas

Std Latitude: 39.1205700

Std Longitude: -96.6385100

Latitude: 39 degrees 7 minutes 13.95 seconds
north

Longitude: 96 degrees 38 minutes 18.64 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 704150 meters

UTM Northing: 4332812 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: S2018KS161016

Pedon ID: S2018KS161016

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	329.0	33						well		

Ap--0 to 7 centimeters (0.0 to 2.8 inches); black (10YR 2/1) interior silt loam; 26 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04406

BA--7 to 33 centimeters (2.8 to 13.0 inches); 60 percent very dark grayish brown (10YR 3/2) interior and 40 percent brown (10YR 4/3) interior silty clay loam; 29 percent clay; moderate medium subangular blocky parts to moderate fine granular structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 20 percent prominent 10YR 2/1), moist, organoargillans on vertical faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04407

Bt1--33 to 51 centimeters (13.0 to 20.1 inches); brown (10YR 5/3) interior silty clay loam; 31 percent clay; moderate medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 30 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04408

Bt2--51 to 75 centimeters (20.1 to 29.5 inches); yellowish brown (10YR 5/4) interior silty clay loam; 36 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 60 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04409

Bt3--75 to 100 centimeters (29.5 to 39.4 inches); yellowish brown (10YR 5/4) interior silty clay loam; 33 percent clay; moderate medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 75 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal. Lab sample # 18N04410

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 1 2018

Describer: Brian Nester

NEON Plot ID: KONA_017

Site ID: S2018KS161017

Pedon ID: S2018KS161017

Site Note: plotID: KONA_017 distance: 5.3 azimuth: 45 reference point: 40x40 SW marker measurement location: pit center

Pedon Note:

Lab Source ID: KSSL

Lab Pedon #: 18N94847

Soil Name as Described/Sampled: Tully

Classification: Fine, 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: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

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

Upslope Shape: concave

Cross Slope Shape: linear

Particle Size Control Section: 30 to 80 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 65 cm.
argillic horizon 30 to 100 cm.
redox concentrations 30 to 100 cm.
redox depletions with chroma 2 or less 97 to 100 cm.
secondary carbonates 97 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 4350 -- Chase silty clay loam, rarely flooded

Pit Location: plotID: KONA_017 distance: 5.3
azimuth: 45 reference point: 40x40 SW marker
measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.4120300

Std Longitude: -96.4874200

Latitude: 39 degrees 24 minutes 43.18 seconds
north

Longitude: 96 degrees 29 minutes 14.71 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 716315 meters

UTM Northing: 4365514 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Row crop

Existing Vegetation:

Parent Material: colluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

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	328.0	30						moderately well		

Ap--0 to 16 centimeters (0.0 to 6.3 inches); silty clay loam, very dark brown (10YR 2/2) interior, moist; 33 percent clay; weak medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04373

BA--16 to 30 centimeters (6.3 to 11.8 inches); silty clay loam, black (10YR 2/1) interior, moist; 38 percent clay; moderate medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; deformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04374

Bt1--30 to 65 centimeters (11.8 to 25.6 inches); silty clay, very dark grayish brown (10YR 3/2) interior, moist; 42 percent clay; moderate medium prismatic structure; very hard, extremely firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 50 percent prominent clay films on all faces of peds; 1 percent fine prominent spherical extremely weakly cemented (10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal; gradual smooth boundary. Lab sample # 18N04375

Bt2--65 to 97 centimeters (25.6 to 38.2 inches); silty clay, brown (10YR 4/3) interior, moist; 43 percent clay; moderate medium prismatic structure; very hard, extremely firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 55 percent prominent clay films on all faces of peds; 1 percent fine prominent spherical extremely weakly cemented (10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04376

Btk--97 to 100 centimeters (38.2 to 39.4 inches); silty clay loam, dark yellowish brown (10YR 4/4) interior, moist; 36 percent clay; weak medium prismatic structure; hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; 25 percent distinct clay films on all faces of peds; 2 percent fine distinct irregular (10YR 5/2), moist, masses of reduced iron with clear boundaries in matrix and 3 percent fine prominent spherical (7.5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; 3 percent fine prominent irregular very weakly cemented (10YR 8/1), moist, carbonate nodules with clear boundaries in matrix and 2 percent medium prominent irregular very weakly cemented (10YR 8/1), moist, carbonate nodules with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04377

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 3 2018

Describer: Brian Nester

NEON Plot ID: KONA_019

Site ID: S2018KS161019

Pedon ID: S2018KS161019

Site Note: plotID: KONA_019 distance: 6.8 azimuth: 135 reference point: 40x40 NW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Smolan series because the dark surface has been eroded and no longer meets a mollic epipedon.

Lab Source ID: KSSL

Lab Pedon #: 18N94857

Soil Name as Described/Sampled: Smolan

Classification: Fine, smectitic, mesic Udic Haplustalfs

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 12 to 62 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 12 cm.
argillic horizon 12 to 100 cm.
redox concentrations 33 to 100 cm.
secondary carbonates 63 to 100 cm.
slickensides 63 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3919 -- Smolan silt loam, 1 to 3 percent slopes

Pit Location: plotID: KONA_019 distance: 6.8
azimuth: 135 reference point: 40x40 NW marker
measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2132000

Std Longitude: -96.5896400

Latitude: 39 degrees 12 minutes 47.41 seconds
north

Longitude: 96 degrees 35 minutes 22.70 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 708102 meters

UTM Northing: 4343204 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

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	327.0	28						moderately well		

Ap--0 to 12 centimeters (0.0 to 4.7 inches); silty clay loam, very dark grayish brown (10YR 3/2) interior, moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04419

Bt1--12 to 33 centimeters (4.7 to 13.0 inches); silty clay loam, brown (7.5YR 4/3) interior, moist; 33 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent distinct 10YR 2/1), moist, organoargillans on vertical faces of peds and 30 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04420

Bt2--33 to 63 centimeters (13.0 to 24.8 inches); silty clay loam, brown (7.5YR 5/4) interior, moist; 39 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent distinct 10YR 2/1), moist, organoargillans on vertical faces of peds and 45 percent prominent clay films on all faces of peds; 2 percent fine distinct spherical 7.5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04421

Btkss1--63 to 79 centimeters (24.8 to 31.1 inches); silty clay loam, brown (7.5YR 5/4) interior, moist; 37 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent distinct 10YR 2/1), moist, organoargillans on vertical faces of peds and 10 percent prominent slickensides (pedogenic) on slickensides and 70 percent prominent clay films on all faces of peds; 2 percent fine distinct spherical weakly cemented 10YR 2/1), moist, iron-manganese nodules with clear boundaries in matrix and 4 percent fine distinct spherical 7.5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; 5 percent medium prominent irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04422

Btkss2--79 to 100 centimeters (31.1 to 39.4 inches); silty clay loam, yellowish brown (10YR 5/6) interior, moist; 35 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine dendritic tubular pores; 5 percent distinct 10YR 2/1), moist, organoargillans on vertical faces of peds and 10 percent prominent slickensides (pedogenic) on slickensides and 35 percent prominent clay films on all faces of peds; 2 percent fine distinct spherical weakly cemented 10YR 2/1), moist, iron-manganese nodules with clear boundaries in matrix and 4 percent fine distinct spherical 7.5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; 5 percent medium prominent irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04423

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 2 2018

Describer: Brian Nester

NEON Plot ID: KONA_020

Site ID: S2018KS161020

Pedon ID: S2018KS161020

Site Note: plotID: KONA_020 distance: 6.4 azimuth: 226 reference point: 20x20 SW marker measurement location: pit center

Pedon Note:

Lab Source ID: KSSL

Lab Pedon #: 18N94850

Soil Name as Described/Sampled: Wymore

Classification: Fine, smectitic, mesic Aquertic Arguidolls

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: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 26 to 76 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 26 cm.
argillic horizon 26 to 100 cm.
slickensides 54 to 100 cm.
redox concentrations 70 to 100 cm.
redox depletions with chroma 2 or less 70 to 100 cm.
secondary carbonates 70 to 100 cm.
episaturation 70 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 7682 -- Wymore silty clay loam, 1 to 3 percent slopes, eroded

Pit Location: plotID: KONA_020 distance: 6.4 azimuth: 226 reference point: 20x20 SW marker measurement location: pit center

Quad Name: Keats, Kansas

Std Latitude: 39.2172600

Std Longitude: -96.6010500

Latitude: 39 degrees 13 minutes 2.03 seconds north

Longitude: 96 degrees 36 minutes 3.78 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707105 meters

UTM Northing: 4343629 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

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	331.0	120						moderately well		

Ap1--0 to 10 centimeters (0.0 to 3.9 inches); very dark brown (10YR 2/2) interior silty clay loam; 29 percent clay; moderate very fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; common very fine roots throughout and common fine roots throughout; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04387

Ap2--10 to 26 centimeters (3.9 to 10.2 inches); 60 percent very dark brown (10YR 2/2) interior and 40 percent dark yellowish brown (10YR 4/4) interior silty clay loam; 36 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 10 percent distinct pressure faces on all faces of peds; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04388

Bt--26 to 54 centimeters (10.2 to 21.3 inches); light yellowish brown (10YR 6/4) interior silty clay; 48 percent clay; strong medium prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 40 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04389

Btss--54 to 70 centimeters (21.3 to 27.6 inches); olive brown (2.5Y 4/3) interior silty clay; 41 percent clay; strong medium prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 10 percent prominent slickensides (pedogenic) on slickensides and 55 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04390

Btkss--70 to 100 centimeters (27.6 to 39.4 inches); light olive brown (2.5Y 5/4) interior silty clay loam; 38 percent clay; strong coarse prismatic structure; very hard, very firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 5 percent distinct slickensides (pedogenic) on slickensides and 20 percent distinct clay films on all faces of peds; 1 percent fine distinct irregular 10YR 6/2), moist, masses of reduced iron with clear boundaries in matrix and 4 percent fine prominent spherical 7.5YR 6/8), moist, masses of oxidized iron with clear boundaries in matrix; 7 percent medium prominent irregular weakly cemented 10YR 8/1), moist, carbonate nodules with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04391

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 1 2018

Describer: Brian Nester

NEON Plot ID: KONA_022

Site ID: S2018KS161022

Pedon ID: S2018KS161022

Site Note: plotID: KONA_022 distance: 7.6 azimuth: 314 reference point: 20x20 NW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Tully series because it does not meet the criteria for Pachic

Lab Source ID: KSSL

Lab Pedon #: 18N94846

Soil Name as Described/Sampled: Tully

Classification: Fine, mixed, superactive, mesic Udic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

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

Upslope Shape: concave

Cross Slope Shape: linear

Particle Size Control Section: 14 to 64 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 36 cm.
argillic horizon 14 to 100 cm.
redox concentrations 36 to 100 cm.
redox depletions with chroma 2 or less 78 to 100 cm.
secondary carbonates 78 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 4784 -- Tully silty clay loam, 3 to 7 percent slopes, eroded

Pit Location: plotID: KONA_022 distance: 7.6 azimuth: 314 reference point: 20x20 NW marker measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2283250

Std Longitude: -96.5917778

Latitude: 39 degrees 13 minutes 41.86 seconds north

Longitude: 96 degrees 35 minutes 30.40 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707873 meters

UTM Northing: 4344878 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Row crop

Existing Vegetation:

Parent Material: colluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

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	300.0	88						moderately well		

Ap--0 to 14 centimeters (0.0 to 5.5 inches); silt loam, very dark brown (10YR 2/2) interior, moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; many very fine roots throughout and many fine roots throughout; many very fine dendritic tubular and common fine dendritic tubular pores; 1 percent flat subangular indurated 2 to 5-millimeter Chert fragments; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04368

Bt1--14 to 36 centimeters (5.5 to 14.2 inches); silty clay loam, very dark grayish brown (10YR 3/2) interior, moist; 35 percent clay; strong coarse subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout and common fine roots throughout; many very fine dendritic tubular and common fine dendritic tubular pores; 35 percent distinct clay films on all faces of peds; 1 percent nonflat subangular indurated 2 to 5-millimeter Chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04369

Bt2--36 to 60 centimeters (14.2 to 23.6 inches); silty clay, brown (10YR 4/3) interior, moist; 45 percent clay; strong medium subangular blocky structure; hard, very firm, very sticky, very plastic; semideformable; common very fine dendritic tubular pores; 45 percent prominent clay films on all faces of peds; 1 percent very fine distinct spherical extremely weakly cemented 10YR 2/1), moist, manganese masses with clear boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04370

Bt3--60 to 78 centimeters (23.6 to 30.7 inches); silty clay, brown (7.5YR 4/4) interior, moist; 45 percent clay; strong medium prismatic structure; hard, very firm, very sticky, very plastic; semideformable; common very fine dendritic tubular pores; 50 percent prominent clay films on all faces of peds; 5 percent very fine prominent spherical extremely weakly cemented 10YR 2/1), moist, manganese masses with clear boundaries in matrix and 20 percent fine faint spherical 5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04371

Btk--78 to 100 centimeters (30.7 to 39.4 inches); silty clay loam, light brown (7.5YR 6/4) interior, moist; 32 percent clay; strong medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; deformable; common very fine dendritic tubular pores; 35 percent distinct clay films on all faces of peds; 10 percent medium distinct irregular 10YR 6/2), moist, masses of reduced iron with clear boundaries in matrix and 20 percent fine faint spherical 5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; 5 percent fine prominent irregular extremely weakly cemented 10YR 8/1), moist, carbonate masses with clear boundaries in matrix and 5 percent medium prominent irregular extremely weakly cemented 10YR 8/1), moist, carbonate masses with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04372

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 2 2018

Describer: Brian Nester

NEON Plot ID: KONA_027

Site ID: S2018KS161027

Pedon ID: S2018KS161027

Site Note: plotID: KONA_027 distance: 6.8 azimuth: 40 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Wymore series because the dark surface has been eroded and no longer meets the Mollic epipedon requirement.

Lab Source ID: KSSL

Lab Pedon #: 18N94853

Soil Name as Described/Sampled: Wymore

Classification: Fine, smectitic, mesic Aquertic Hapludalfs

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 7 to 57 cm.

Description origin: NASIS

Diagnostic Features: ochric epipedon 0 to 7 cm.
argillic horizon 7 to 100 cm.
redox depletions with chroma 2 or less 43 to 100 cm.
secondary carbonates 43 to 100 cm.
episaturation 43 to 100 cm.
redox concentrations 43 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3923 -- Smolan silty clay loam, 3 to 7 percent slopes, eroded

Pit Location: plotID: KONA_027 distance: 6.8 azimuth: 40 reference point: 40x40 SW marker measurement location: pit center

Quad Name: Ogden, Kansas

Std Latitude: 39.1237100

Std Longitude: -96.6423500

Latitude: 39 degrees 7 minutes 25.26 seconds north

Longitude: 96 degrees 38 minutes 32.46 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 703809 meters

UTM Northing: 4333152 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

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	338.0	97						moderately well		

Ap--0 to 7 centimeters (0.0 to 2.8 inches); very dark brown (10YR 2/2) interior silty clay loam; 32 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04402

Bt--7 to 43 centimeters (2.8 to 16.9 inches); brown (10YR 5/3) interior silty clay loam; 36 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 8 percent prominent 10YR 2/1), moist, organoargillans on vertical faces of peds and 15 percent distinct clay films on all faces of peds; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04403

Btk1--43 to 67 centimeters (16.9 to 26.4 inches); light yellowish brown (10YR 6/4) interior silty clay; 41 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 30 percent prominent clay films on all faces of peds; 1 percent very fine prominent spherical weakly cemented 10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix and 3 percent fine distinct spherical 7.5YR 5/6), moist, masses of oxidized iron with diffuse boundaries in matrix and 5 percent fine distinct spherical 10YR 6/2), moist, masses of reduced iron with diffuse boundaries in matrix; 3 percent coarse distinct irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix and 2 percent medium distinct irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04404

Btk2--67 to 100 centimeters (26.4 to 39.4 inches); light olive brown (2.5Y 5/4) interior silty clay loam; 34 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 25 percent prominent clay films on all faces of peds; 3 percent very fine prominent spherical weakly cemented 10YR 2/1), moist, manganese masses with sharp boundaries in matrix and 10 percent fine prominent spherical 7.5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix and 10 percent fine prominent spherical 10YR 6/1), moist, masses of reduced iron with clear boundaries in matrix; 1 percent coarse distinct irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix and 2 percent medium distinct irregular weakly cemented 10YR 8/1), moist, carbonate nodules with sharp boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04405

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 3 2018

Describer: Brian Nester

NEON Plot ID: KONA_035

Site ID: S2018KS161035

Pedon ID: S2018KS161035

Site Note: plotID: KONA_035 distance: 7.0 azimuth: 32 reference point: 40x40 SW marker measurement location: pit center

Pedon Note: This site is a taxadjunct to the Smolan series because the dark surface has been eroded and no longer meets the Pachic requirement.

Lab Source ID: KSSL

Lab Pedon #: 18N94858

Soil Name as Described/Sampled: Smolan

Classification: Fine, smectitic, mesic Udic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 32 to 82 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 32 cm.
argillic horizon 32 to 100 cm.
redox concentrations 63 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 3919 -- Smolan silt loam, 1 to 3 percent slopes

Pit Location: plotID: KONA_035 distance: 7.0 azimuth: 32 reference point: 40x40 SW marker measurement location: pit center

Quad Name: Manhattan, Kansas

Std Latitude: 39.2099300

Std Longitude: -96.5927700

Latitude: 39 degrees 12 minutes 35.64 seconds north

Longitude: 96 degrees 35 minutes 33.97 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 707841 meters

UTM Northing: 4342834 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

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	329.0	350						moderately well		

Ap--0 to 15 centimeters (0.0 to 5.9 inches); silty clay loam, very dark grayish brown (10YR 3/2) interior, moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04424

BA--15 to 32 centimeters (5.9 to 12.6 inches); silty clay loam, very dark grayish brown (10YR 3/2) interior, moist; 36 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine dendritic tubular and common fine dendritic tubular pores; 10 percent distinct pressure faces on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04425

Bt1--32 to 63 centimeters (12.6 to 24.8 inches); silty clay loam, brown (7.5YR 4/3) interior, moist; 38 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine dendritic tubular and common fine dendritic tubular pores; 35 percent prominent clay films on all faces of peds; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04426

Bt2--63 to 89 centimeters (24.8 to 35.0 inches); silty clay loam, brown (7.5YR 4/4) interior, moist; 34 percent clay; moderate medium prismatic structure; hard, firm, moderately sticky, moderately plastic; semideformable; 5 percent prominent silt coats on vertical faces of peds and 40 percent prominent clay films on all faces of peds; 3 percent fine prominent irregular 10YR 2/1), moist, manganese masses with clear boundaries in matrix and 10 percent fine distinct spherical 5YR 4/6), moist, masses of oxidized iron with diffuse boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04427

Bt3--89 to 100 centimeters (35.0 to 39.4 inches); silty clay loam, strong brown (7.5YR 4/6) interior, moist; 27 percent clay; moderate medium prismatic structure; moderately hard, friable, moderately sticky, moderately plastic; deformable; common very fine dendritic tubular pores; 30 percent distinct clay films on all faces of peds; 3 percent fine prominent spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with clear boundaries in matrix and 10 percent fine distinct spherical 5YR 4/6), moist, masses of oxidized iron with clear boundaries in matrix; noneffervescent, by HCl, 1 normal. Lab sample # 18N04428

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 3 2018

Describer: Brian Nester

NEON Plot ID: KONA_048

Site ID: S2018KS161048

Pedon ID: S2018KS161048

Site Note: plotID: KONA_048 distance: 4.2, 4.0, 3.9 azimuth: 48, 48, 51
reference point: 40x40 SW marker measurement location: core center

Pedon Note: This site is a taxadjunct to Reading because it has a fine PSC instead of fine-silty.

Lab Source ID: KSSL

Lab Pedon #: 18N94856

Soil Name as Described/Sampled: Reading

Classification: Fine, mixed, superactive, mesic Pachic Argiudolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on tread of stream terrace on river valley

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 45 to 95 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 100 cm.
redox concentrations 45 to 100 cm.
argillic horizon 45 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 7174 -- Reading silt loam, 1 to 3 percent slopes

Pit Location: plotID: KONA_048 distance: 4.2, 4.0, 3.9 azimuth: 48, 48, 51 reference point: 40x40 SW marker measurement location: core center

Quad Name: Swede Creek, Kansas

Std Latitude: 39.1078700

Std Longitude: -96.6128600

Latitude: 39 degrees 6 minutes 28.23 seconds north

Longitude: 96 degrees 36 minutes 46.30 seconds west

Datum: WGS84

UTM Zone: 14

UTM Easting: 706405 meters

UTM Northing: 4331460 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: S2018KS161048

Pedon ID: S2018KS161048

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	330.0	35						moderately well		

Ap1--0 to 15 centimeters (0.0 to 5.9 inches); black (10YR 2/1) interior silt loam; 24 percent clay; moderate very fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04415

Ap2--15 to 45 centimeters (5.9 to 17.7 inches); very dark brown (10YR 2/2) interior silty clay loam; 29 percent clay; moderate medium subangular blocky parts to moderate fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04416

Bt1--45 to 75 centimeters (17.7 to 29.5 inches); dark brown (10YR 3/3) interior silty clay loam; 35 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; 30 percent distinct clay films on all faces of peds; 15 percent very fine prominent spherical 7.5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04417

Bt2--75 to 100 centimeters (29.5 to 39.4 inches); dark brown (10YR 3/3) interior silty clay loam; 38 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; semideformable; common very fine roots throughout; common very fine dendritic tubular pores; 50 percent prominent clay films on all faces of peds; 15 percent very fine prominent spherical 7.5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; 2 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal. Lab sample # 18N04418

PEDON DESCRIPTION -- NEON Site KONA

Print Date: Jun 25 2018

Description Date: May 3 2018

Describer: Brian Nester

NEON Plot ID: KONA_057

Site ID: S2018KS161057

Pedon ID: S2018KS161057

Site Note: plotID: KONA_057 distance: 7.8, 8.1, 7.8 azimuth: 44, 45, 46
reference point: 40x40 SW marker measurement location: core center

Pedon Note: This site is a taxadjunct to the Irwin series because the dark surface has been eroded and no longer meets the Pachic requirement.

Lab Source ID: KSSL

Lab Pedon #: 18N94855

Soil Name as Described/Sampled: Irwin

Classification: Fine, mixed, superactive, mesic Udic Argiustolls

Soil Name as Correlated:

Classification:

Pedon Type: taxadjunct to the series

Pedon Purpose: research site

Taxon Kind: taxadjunct

Associated Soils:

Physiographic Division: Interior Plains

Physiographic Province: Central Lowland Province

Physiographic Section: Osage plain

State Physiographic Area: Flint Hills Upland

Local Physiographic Area: Flint Hills Uplands

Geomorphic Setting: on backslope of side slope of hillslope on upland

Upslope Shape: linear

Cross Slope Shape: linear

Particle Size Control Section: 16 to 66 cm.

Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 46 cm.
argillic horizon 16 to 100 cm.
redox concentrations 16 to 100 cm.
redox depletions with chroma 2 or less 82 to 100 cm.

Country: United States

State: Kansas

County: Riley

MLRA: 76 -- Bluestem Hills

Soil Survey Area: KS161 -- Riley County, Kansas
5-SAL -- Salina, Kansas

Map Unit: 4674 -- Irwin silty clay loam, 3 to 7
percent slopes, eroded

Pit Location: plotID: KONA_057 distance: 7.8, 8.1,
7.8 azimuth: 44, 45, 46 reference point: 40x40 SW
marker measurement location: core center

Quad Name: Swede Creek, Kansas

Std Latitude: 39.1083400

Std Longitude: -96.6147800

Latitude: 39 degrees 6 minutes 29.92 seconds
north

Longitude: 96 degrees 36 minutes 53.21 seconds
west

Datum: WGS84

UTM Zone: 14

UTM Easting: 706237 meters

UTM Northing: 4331508 meters

Primary Earth Cover: Crop cover

Secondary Earth Cover: Row crop

Existing Vegetation:

Parent Material: loess over colluvium

Bedrock Kind:

Bedrock Depth:

Bedrock Hardness:

Bedrock Fracture Interval:

Surface Fragments:

Description database: KSSL

Cont. Site ID: S2018KS161057

Pedon ID: S2018KS161057

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	334.0	40						moderately well		

Ap--0 to 16 centimeters (0.0 to 6.3 inches); silt loam, very dark grayish brown (10YR 3/2) interior, moist; 26 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; deformable; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 18N04411

2Bt1--16 to 46 centimeters (6.3 to 18.1 inches); silty clay loam, 60 percent very dark grayish brown (10YR 3/2) interior and 40 percent dark brown (7.5YR 3/3) interior, moist; 38 percent clay; moderate medium subangular blocky structure; hard, very firm, very sticky, very plastic; semideformable; 35 percent prominent clay films on all faces of peds; 1 percent very fine prominent spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix and 15 percent fine prominent spherical 5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; 3 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04412

2Bt2--46 to 82 centimeters (18.1 to 32.3 inches); silty clay, yellowish red (5YR 4/6) interior, moist; 45 percent clay; strong medium subangular blocky structure; very hard, extremely firm, very sticky, very plastic; semideformable; 55 percent prominent clay films on all faces of peds; 1 percent very fine prominent spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix and 20 percent fine prominent spherical 5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; 10 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 18N04413

2Bt3--82 to 100 centimeters (32.3 to 39.4 inches); silty clay, strong brown (7.5YR 5/6) interior, moist; 49 percent clay; strong medium subangular blocky structure; very hard, extremely firm, very sticky, very plastic; semideformable; 60 percent prominent clay films on all faces of peds; 1 percent very fine prominent spherical very weakly cemented 10YR 2/1), moist, iron-manganese nodules with sharp boundaries in matrix and 3 percent fine prominent irregular 10YR 6/1), moist, masses of reduced iron with clear boundaries in matrix and 20 percent fine distinct spherical 5YR 5/8), moist, masses of oxidized iron with clear boundaries in matrix; 8 percent nonflat subangular indurated 2 to 5-millimeter chert fragments; noneffervescent, by HCl, 1 normal. Lab sample # 18N04414