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**County specific computer generated reports.*

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Sedgwick County, Kansas: Published

Map symbol	Soil name	Acres	Percent
015LS	Ladysmith Silty Clay Loam, 0 To 2 Percent Slopes-----	939	0.1
079CR	Crete Silt Loam, 0 To 1 Percent Slopes-----	33	*
079CT	Crete Silt Loam, 1 To 3 Percent Slopes-----	128	*
079DE	Detroit Silty Clay Loam, Rarely Flooded-----	487	*
079DU	Drummond Complex, 0 To 1 Percent Slopes-----	78	*
079FA	Farnum Fine Sandy Loam, 0 To 1 Percent Slopes-----	3,649	0.6
079FE	Farnum Loam, 3 To 6 Percent Slopes-----	4	*
079GD	Geary Silt Loam, 1 To 3 Percent Slopes-----	4	*
079KA	Kaski Loam, Occasionally Flooded-----	1	*
079LA	Ladysmith Silty Clay Loam, 0 To 1 Percent Slopes-----	1,814	0.3
079LB	Ladysmith Silty Clay Loam, 1 To 2 Percent Slopes-----	195	*
079SM	Smolan Silty Clay Loam, 1 To 3 Percent Slopes-----	232	*
095AD	Albion Sandy Loam, 6 To 15 Percent Slopes-----	16	*
095LA	Lincoln Loamy Sand, Occasionally Flooded-----	13	*
095WA	Waldeck Fine Sandy Loam, Occasionally Flooded-----	20	*
191BA	Bethany Silt Loam, 0 To 1 Percent Slopes-----	1,881	0.3
191BB	Bethany Silt Loam, 1 To 3 Percent Slopes-----	1,675	0.3
191DR	Dale And Reinach Silt Loams, Rarely Flooded-----	883	0.1
191EA	Elandco Silty Clay Loam, Rarely Flooded-----	1,250	0.2
191LO	Lesho Clay Loam, Occasionally Flooded-----	31	*
1011	Albion-Shellabarger Sandy Loams, 1 To 3 Percent Slopes-----	650	0.1
1070	Avans Loam, 0 To 1 Percent Slopes-----	6,819	1.1
1071	Avans Loam, 1 To 3 Percent Slopes-----	3,633	0.6
1072	Avans Loam, 3 To 7 Percent Slopes-----	13	*
2204	Jamash-Piedmont Clay Loams, 0 To 1 Percent Slopes-----	27	*
2205	Jamash-Piedmont Clay Loams, 1 To 3 Percent Slopes-----	175	*
2207	Jamash Clay Loam, 0 To 8 Percent Slopes-----	48	*
2381	Kanza-Ninnescah Sandy Loams, 0 To 2 Percent Slopes, Commonly Flooded-----	14	*
2587	Imano Clay Loam, 0 To 1 Percent Slopes, Occasionally Flooded-----	47	*
2948	Nalim Loam, 0 To 1 Percent Slopes-----	5	*
3052	Ost-Clark Loams, 1 To 3 Percent Slopes-----	168	*
3170	Penalosa Silt Loam, 0 To 1 Percent Slopes-----	33	*
3171	Penalosa Silt Loam, 1 To 3 Percent Slopes-----	305	*
3535	Shellabarger-Nalim Complex, 1 To 3 Percent Slopes-----	747	0.1
3639	Taver Loam, 0 To 1 Percent Slopes-----	1	*
3966	Willowbrook Fine Sandy Loam, 0 To 1 Percent Slopes, Occasionally Flooded-----	0	*
4004	Yaggy Fine Sandy Loam, 0 To 1 Percent Slopes-----	159	*
Aa	Albion-Shellabarger Sandy Loams, 1 To 4 Percent Slopes-----	1,550	0.2
Ab	Albion And Shellabarger Sandy Loams, 7 To 15 Percent Slopes-----	760	0.1
AED	Arents, Earthen Dam-----	87	*
Ba	Blanket Silt Loam, 0 To 1 Percent Slopes-----	49,895	7.7
Bb	Blanket Silt Loam, 1 To 3 Percent Slopes-----	46,408	7.2
BRR	Brewer Silty Clay Loam, Rarely Flooded-----	371	*
Ca	Canadian Fine Sandy Loam, Rarely Flooded-----	16,721	2.6
Cb	Canadian-Waldeck Fine Sandy Loams, Rarely Flooded-----	4,310	0.7
Cc	Carwile Fine Sandy Loam, 0 To 1 Percent Slopes-----	13,713	2.1
Cd	Clark-Ost Clay Loams, 1 To 4 Percent Slopes-----	2,706	0.4
Ce	Clime Silty Clay, 3 To 6 Percent Slopes-----	9,811	1.5
Ea	Elandco Silt Loam, Rarely Flooded-----	18,684	2.9
Eb	Elandco Silt Loam, Occasionally Flooded-----	8,638	1.3
Ec	Elandco Silt Loam, Frequently Flooded-----	11,830	1.8
Fa	Farnum Loam, 0 To 1 Percent Slopes-----	12,658	2.0
Fb	Farnum Loam, 1 To 3 Percent Slopes-----	51,241	7.9
Fc	Farnum Loam, Sandy Substratum, 0 To 1 Percent Slopes-----	8,533	1.3
Ga	Goessel Silty Clay, 0 To 1 Percent Slopes-----	3,398	0.5
Gb	Goessel Silty Clay, 1 To 2 Percent Slopes-----	10,756	1.7
Ia	Irwin Silty Clay Loam, 1 To 3 Percent Slopes-----	39,690	6.1
Ib	Irwin Silty Clay Loam, 3 To 6 Percent Slopes-----	1,225	0.2
Ic	Irwin Silty Clay Loam, 2 To 6 Percent Slopes, Eroded-----	1,687	0.3
INT	Aquolls-----	620	*
KAA	Kaski Loam, Occasionally Flooded-----	104	*
La	Lesho Loam, Occasionally Flooded-----	10,003	1.5
Lb	Lincoln Soils, Frequently Flooded-----	5,866	0.9
M-W	Miscellaneous Water-----	118	*
Ma	Milan Loam, 1 To 3 Percent Slopes-----	24,752	3.8
Mb	Milan Loam, 3 To 6 Percent Slopes-----	5,779	0.9
Mc	Milan Clay Loam, 2 To 6 Percent Slopes, Eroded-----	2,516	0.4
Na	Naron Fine Sandy Loam, 0 To 2 Percent Slopes-----	21,939	3.4
Oc	Wellsford Clay Loam, 1 To 3 Percent Slopes-----	1,387	0.2
Od	Wellsford-Rock Outcrop Complex, 3 To 10 Percent Slopes-----	1,129	0.2
Pa	Pits-----	1,496	0.2
Pb	Plevna Fine Sandy Loam, Frequently Flooded-----	5,177	0.8
Pc	Pratt Loamy Fine Sand, 1 To 5 Percent Slopes-----	6,655	1.0
Pd	Pratt-Tivoli Complex, 5 To 30 Percent Slopes-----	2,374	0.4
Ra	Renfrow Silty Clay Loam, 1 To 3 Percent Slopes-----	14,768	2.3
Rb	Renfrow Silty Clay Loam, 3 To 6 Percent Slopes-----	1,672	0.3
Rc	Renfrow-Wellsford Clay Loams, 1 To 4 Percent Slopes-----	1,523	0.2
Rd	Rosehill Silty Clay, 1 To 3 Percent Slopes-----	28,231	4.4
Sa	Shellabarger Sandy Loam, 1 To 3 Percent Slopes-----	19,667	3.0
Sb	Shellabarger Sandy Loam, 3 To 6 Percent Slopes-----	2,836	0.4
Sc	Shellabarger Sandy Loam, 3 To 6 Percent Slopes, Eroded-----	712	0.1
Ta	Tabler Silty Clay Loam, 0 To 1 Percent Slopes-----	37,769	5.9
Tb	Tabler-Drummond Complex, 0 To 1 Percent Slopes-----	10,443	1.6
Ua	Urban Land-Canadian Complex, 0 To 3 Percent Slopes-----	10,597	1.6
Ub	Urban Land-Elandco Complex, 0 To 1 Percent Slopes-----	7,071	1.1
Uc	Urban Land-Farnum Complex, 0 To 3 Percent Slopes-----	6,388	1.0
Ud	Urban Land-Irwin Complex, 1 To 3 Percent Slopes-----	6,283	1.0
Ue	Urban Land-Tabler Complex, 0 To 1 Percent Slopes-----	4,689	0.7
Va	Vanoss Silt Loam, 0 To 1 Percent Slopes-----	9,614	1.5
Vb	Vanoss Silt Loam, 1 To 3 Percent Slopes-----	22,950	3.6
Vc	Vanoss Silt Loam, 3 To 6 Percent Slopes-----	4,106	0.6
Vd	Vanoss Silt Loam, 3 To 6 Percent Slopes, Eroded-----	2,030	0.3

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Sedgwick County, Kansas: Published

Map symbol	Soil name	Acres	Percent
Ve	Vernon Sandy Loam, 1 To 3 Percent Slopes-----	3,667	0.6
Vf	Vernon Sandy Loam, 3 To 6 Percent Slopes-----	1,348	0.2
W	Water-----	7,492	1.2
Wa	Waldeck Sandy Loam, Occasionally Flooded-----	8,871	1.4
Wb	Waurika Silt Loam, 0 To 1 Percent Slopes-----	1,949	0.3
	Total-----	645,440	100.0

* Less than 0.1 percent.

Nontechnical Soil Descriptions
Sedgwick County, Kansas

Nontechnical soil descriptions describe soil properties or management considerations specific to a soil map unit or group of map units, shown in the NonTechnical Descriptions report. These descriptions are written in terminology that Non-technical users of soil survey information can understand. Nontechnical soil descriptions are a powerful tool for creating reports. These high quality, easy to read reports can be generated by conservation planners and other NRCS employees for distribution to land users. Soil map unit descriptions and National Soil Information System records are the basis for these descriptions.

015LS Ladysmith Silty Clay Loam, 0 To 2 Percent Slopes

Ladysmith soil makes up 90 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping summit, shoulder ridge on upland. The runoff class is high. The parent material consists of clayey alluvium. This soil is somewhat poorly drained. The slowest permeability is impermeable. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Clay Upland (pe30-36) range site. It is in the nonirrigated land capability classification 2s.

079CR Crete Silt Loam, 0 To 1 Percent Slopes

Crete soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level upland. The runoff class is medium. The parent material consists of silty and clayey loess. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. This soil is in the irrigated land capability class 2s. It is in the nonirrigated land capability classification 2s.

079CT Crete Silt Loam, 1 To 3 Percent Slopes

Crete soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of silty and clayey loess. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

079DE Detroit Silty Clay Loam, Rarely Flooded

Detroit soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level river valley, flood plain. The runoff class is negligible. The parent material consists of alluvium. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe25-34) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 1.

079DU Drummond Complex, 0 To 1 Percent Slopes

Drummond soil makes up 75 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level terrace on river valley. The runoff class is negligible. The parent material consists of clayey and/or loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a moderately saline horizon. This soil is in the Saline Lowland (pe25-34) range site. It is in the nonirrigated land capability classification 6s.

079FA Farnum Fine Sandy Loam, 0 To 1 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe25-34) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 1.

079FE Farnum Loam, 3 To 6 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe25-34) range site. It is in the nonirrigated land capability classification 3e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

079GD Geary Silt Loam, 1 To 3 Percent Slopes

Geary soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is very low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe25-34) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

079KA Kaski Loam, Occasionally Flooded

Kaski soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe25-34) range site. It is in the nonirrigated land capability classification 2w.

079LA Ladysmith Silty Clay Loam, 0 To 1 Percent Slopes

Ladysmith soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on upland. The runoff class is low. The parent material consists of clayey alluvium. This soil is somewhat poorly drained. The slowest permeability is impermeable. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 2s.

079LB Ladysmith Silty Clay Loam, 1 To 2 Percent Slopes

Ladysmith soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is low. The parent material consists of clayey alluvium. This soil is somewhat poorly drained. The slowest permeability is impermeable. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 3e.

079SM Smolan Silty Clay Loam, 1 To 3 Percent Slopes

Smolan soil makes up 90 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping footslope hillslope on upland. The runoff class is high. The parent material consists of silty and clayey loess. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe25-34) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

095AD Albion Sandy Loam, 6 To 15 Percent Slopes

Albion soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep paleoterrace on river valley. The runoff class is medium. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 6e.

095LA Lincoln Loamy Sand, Occasionally Flooded

Lincoln soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 66 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy Lowland (pe24-32) range site. It is in the nonirrigated land capability classification 6w.

095WA Waldeck Fine Sandy Loam, Occasionally Flooded

Waldeck soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 3w.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

191BA Bethany Silt Loam, 0 To 1 Percent Slopes

Bethany soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on upland. The runoff class is very low. The parent material consists of alluvium and/or loess over shale. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe25-34) range site. It is in the nonirrigated land capability classification 2c.

191BB Bethany Silt Loam, 1 To 3 Percent Slopes

Bethany soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is low. The parent material consists of alluvium and/or loess over shale. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe25-34) range site. It is in the nonirrigated land capability classification 2e.

191DR Dale And Reinach Silt Loams, Rarely Flooded

Dale soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Reinach soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level <geomorphology is missing>. The runoff class is negligible. <parent material is missing> This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

191EA Elandco Silty Clay Loam, Rarely Flooded

Elandco soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

191LO Lesho Clay Loam, Occasionally Flooded

Lesho soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately slow. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a very slightly saline horizon. This soil is in the Subirrigated (pe24-32) range site. It is in the nonirrigated land capability classification 3w.

1011 Albion-Shellabarger Sandy Loams, 1 To 3 Percent Slopes

Albion soil makes up 70 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 3e.

Shellabarger soil makes up 30 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

1070 Avans Loam, 0 To 1 Percent Slopes

Avans soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 3 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. It is in the nonirrigated land capability classification 1.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

1071 Avans Loam, 1 To 3 Percent Slopes

Avans soil makes up 85 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 3 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. It is in the nonirrigated land capability classification 1.

1072 Avans Loam, 3 To 7 Percent Slopes

Avans soil makes up 85 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is medium. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 3 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

2204 Jamash-Piedmont Clay Loams, 0 To 1 Percent Slopes

Jamash soil makes up 50 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level pediment on upland. The runoff class is very low. The parent material consists of residuum weathered from shale, unspecified. The soil is 12 to 15 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Shallow Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Piedmont soil makes up 50 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level pediment on upland. The runoff class is very low. The parent material consists of residuum weathered from shale, clayey. The soil is 32 to 36 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Clay Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

2205 Jamash-Piedmont Clay Loams, 1 To 3 Percent Slopes

Jamash soil makes up 60 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping pediment on upland. The runoff class is low. The parent material consists of residuum weathered from shale, unspecified. The soil is 12 to 15 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Shallow Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Piedmont soil makes up 40 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping pediment on upland. The runoff class is low. The parent material consists of residuum weathered from shale, clayey. The soil is 32 to 36 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Clay Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

2207 Jamash Clay Loam, 0 To 8 Percent Slopes

Jamash soil makes up 80 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level to strongly sloping pediment on upland. The runoff class is medium. The parent material consists of residuum weathered from shale, unspecified. The soil is 12 to 15 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Shallow Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 6e.

2381 Kanza-Ninnescah Sandy Loams, 0 To 2 Percent Slopes, Commonly Flooded

Kanza soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is poorly drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 18 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 5w.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Ninnescah soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 24 inches. The soil contains a maximum amount of 14 percent calcium carbonate. This soil contains a very slightly saline horizon, it has a horizon that is slightly sodic. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 5w.

2587 Imano Clay Loam, 0 To 1 Percent Slopes, Occasionally Flooded

Imano soil makes up 85 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium over sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately slow. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 3w.

2948 Nalim Loam, 0 To 1 Percent Slopes

Nalim soil makes up 80 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

3052 Ost-Clark Loams, 1 To 3 Percent Slopes

Ost soil makes up 55 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 34 percent calcium carbonate. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2c.

Clark soil makes up 45 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 45 percent calcium carbonate. This soil is in the Limy Upland (pe21-28) range site. It is in the nonirrigated land capability classification 2c.

3170 Penalosa Silt Loam, 0 To 1 Percent Slopes

Penalosa soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

3171 Penalosa Silt Loam, 1 To 3 Percent Slopes

Penalosa soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

3535 Shellabarger-Nalim Complex, 1 To 3 Percent Slopes

Shellabarger soil makes up 55 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Nalim soil makes up 45 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

3639 Taver Loam, 0 To 1 Percent Slopes

Taver soil makes up 90 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe21-28) range site. It is in the nonirrigated land capability classification 2s.

3966 Willowbrook Fine Sandy Loam, 0 To 1 Percent Slopes, Occasionally Flooded

Willowbrook soil makes up 90 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium over sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Subirrigated (pe21-28) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 3e.

4004 Yaggy Fine Sandy Loam, 0 To 1 Percent Slopes

Yaggy soil makes up 95 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium over sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy Lowland (pe21-28) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 3e.

Aa Albion-Shellabarger Sandy Loams, 1 To 4 Percent Slopes

Albion soil makes up 70 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Shellabarger soil makes up 30 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

Ab Albion And Shellabarger Sandy Loams, 7 To 15 Percent Slopes

Albion soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep paleoterrace on river valley. The runoff class is medium. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 6e.

Shellabarger soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep paleoterrace on river valley. The runoff class is medium. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 6e.

Ba Blanket Silt Loam, 0 To 1 Percent Slopes

Blanket soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of clayey alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Bb Blanket Silt Loam, 1 To 3 Percent Slopes

Blanket soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of clayey alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

BRR Brewer Silty Clay Loam, Rarely Flooded

Brewer soil makes up 85 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is medium. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe25-34) range site. It is in the nonirrigated land capability classification 1.

Ca Canadian Fine Sandy Loam, Rarely Flooded

Canadian soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level river valley, flood plain. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Cb Canadian-Waldeck Fine Sandy Loams, Rarely Flooded

Canadian soil makes up 70 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level river valley, flood plain. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Waldeck soil makes up 30 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil is in the Subirrigated (pe24-32) range site. It is in the nonirrigated land capability classification 3w.

Cc Carwile Fine Sandy Loam, 0 To 1 Percent Slopes

Carwile soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level depression on paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 2w.

Cd Clark-Ost Clay Loams, 1 To 4 Percent Slopes

Clark soil makes up 75 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 45 percent calcium carbonate. This soil is in the Limy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Ost soil makes up 25 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 34 percent calcium carbonate. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

Ce Clime Silty Clay, 3 To 6 Percent Slopes

Clime soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is high. The parent material consists of silty and clayey residuum weathered from shale, calcareous. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is slow. It has a low available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe25-34) range site. It is in the nonirrigated land capability classification 4e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Ea Elandco Silt Loam, Rarely Flooded

Elandco soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Terrace (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Eb Elandco Silt Loam, Occasionally Flooded

Elandco soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe24-32) range site. It is in the nonirrigated land capability classification 2w.

Ec Elandco Silt Loam, Frequently Flooded

Elandco soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is frequently flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe24-32) range site. It is in the nonirrigated land capability classification 5w.

Fa Farnum Loam, 0 To 1 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 1.

Fb Farnum Loam, 1 To 3 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Fc Farnum Loam, Sandy Substratum, 0 To 1 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 1.

Ga Goessel Silty Clay, 0 To 1 Percent Slopes

Goessel soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on upland. The runoff class is negligible. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 30 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 2s.

Gb Goessel Silty Clay, 1 To 2 Percent Slopes

Goessel soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is very low. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 30 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 3e.

NONTECHNICAL SOIL DESCRIPTIONS--Continued
Sedgwick County, Kansas

Ia Irwin Silty Clay Loam, 1 To 3 Percent Slopes

Irwin soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is medium. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 3e.

Ib Irwin Silty Clay Loam, 3 To 6 Percent Slopes

Irwin soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 4e.

Ic Irwin Silty Clay Loam, 2 To 6 Percent Slopes, Eroded

Irwin soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 4e.

INT Aquolls

Aquolls soil makes up 100 percent of the map unit. This map unit is in the This soil occurs on a nearly level depression on terrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is very poorly drained. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is occasional ponded. The top of the seasonal high water table is at 0 inches. It is in the nonirrigated land capability classification 5w.

KAA Kaski Loam, Occasionally Flooded

Kaski soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe25-34) range site. It is in the nonirrigated land capability classification 2w.

La Lesho Loam, Occasionally Flooded

Lesho soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately slow. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a very slightly saline horizon. This soil is in the Subirrigated (pe24-32) range site. It is in the nonirrigated land capability classification 3w.

Lb Lincoln Soils, Frequently Flooded

Lincoln soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 66 inches. This soil is in the Sandy Lowland (pe24-32) range site. It is in the nonirrigated land capability classification 6w.

Ma Milan Loam, 1 To 3 Percent Slopes

Milan soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe24-32) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Mb Milan Loam, 3 To 6 Percent Slopes

Milan soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is medium. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Mc Milan Clay Loam, 2 To 6 Percent Slopes, Eroded

Milan soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping paleoterrace on river valley. The runoff class is medium. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Na Naron Fine Sandy Loam, 0 To 2 Percent Slopes

Naron soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of loamy eolian deposits. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. This soil is in the irrigated land capability class 1. It is in the nonirrigated land capability classification 1.

Oc Wellsford Clay Loam, 1 To 3 Percent Slopes

Wellsford soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping pediment on upland. The runoff class is very low. The parent material consists of residuum. The soil is 10 to 20 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Od Wellsford-Rock Outcrop Complex, 3 To 10 Percent Slopes

Wellsford soil makes up 60 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping pediment on upland. The runoff class is medium. The parent material consists of residuum. The soil is 10 to 20 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 6e.

Pb Plevna Fine Sandy Loam, Frequently Flooded

Plevna soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 12 inches. This soil is in the Subirrigated (pe24-32) range site. It is in the nonirrigated land capability classification 5w.

Pc Pratt Loamy Fine Sand, 1 To 5 Percent Slopes

Pratt soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe24-32) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Pd Pratt-Tivoli Complex, 5 To 30 Percent Slopes

Pratt soil makes up 65 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping dune on paleoterrace on river valley. The runoff class is low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe24-32) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

Tivoli soil makes up 35 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to steep dune on paleoterrace on river valley. The runoff class is low. The parent material consists of sandy eolian deposits. This soil is excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe24-32) range site. It is in the nonirrigated land capability classification 7e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Ra Renfrow Silty Clay Loam, 1 To 3 Percent Slopes

Renfrow soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Rb Renfrow Silty Clay Loam, 3 To 6 Percent Slopes

Renfrow soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Rc Renfrow-Wellsford Clay Loams, 1 To 4 Percent Slopes

Renfrow soil makes up 65 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping hillslope on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Wellsford soil makes up 35 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping pediment on upland. The runoff class is low. The parent material consists of residuum. The soil is 10 to 20 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Rd Rosehill Silty Clay, 1 To 3 Percent Slopes

Rosehill soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of residuum. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is moderately well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 3e.

Sa Shellabarger Sandy Loam, 1 To 3 Percent Slopes

Shellabarger soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

Sb Shellabarger Sandy Loam, 3 To 6 Percent Slopes

Shellabarger soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Sc Shellabarger Sandy Loam, 3 To 6 Percent Slopes, Eroded

Shellabarger soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Ta Tabler Silty Clay Loam, 0 To 1 Percent Slopes

Tabler soil makes up 100 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe25-34) range site. It is in the nonirrigated land capability classification 2s.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Tb Tabler-Drummond Complex, 0 To 1 Percent Slopes

Tabler soil makes up 60 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2s.

Drummond soil makes up 40 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level terrace on river valley. The runoff class is negligible. The parent material consists of clayey and/or loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 48 inches. This soil contains a slightly saline horizon. This soil is in the Saline Lowland (pe24-32) range site. It is in the nonirrigated land capability classification 6s.

Ua Urban Land-Canadian Complex, 0 To 3 Percent Slopes

Canadian soil makes up 30 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain, river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. It is in the nonirrigated land capability classification 1.

Ub Urban Land-Elandco Complex, 0 To 1 Percent Slopes

Elandco soil makes up 25 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. It is in the nonirrigated land capability classification 1.

Uc Urban Land-Farnum Complex, 0 To 3 Percent Slopes

Farnum soil makes up 30 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level to gently sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Ud Urban Land-Irwin Complex, 1 To 3 Percent Slopes

Irwin soil makes up 30 percent of the map unit. This map unit is in the Central Loess Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on upland. The runoff class is very low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. It is in the nonirrigated land capability classification 3e.

Ue Urban Land-Tabler Complex, 0 To 1 Percent Slopes

Tabler soil makes up 30 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of clayey alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. It is in the nonirrigated land capability classification 2s.

Va Vanoss Silt Loam, 0 To 1 Percent Slopes

Vanoss soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 1.

Vb Vanoss Silt Loam, 1 To 3 Percent Slopes

Vanoss soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2e.

Nontechnical Soil Descriptions--Continued
Sedgwick County, Kansas

Vc Vanoss Silt Loam, 3 To 6 Percent Slopes

Vanoss soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Vd Vanoss Silt Loam, 3 To 6 Percent Slopes, Eroded

Vanoss soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping paleoterrace on river valley. The runoff class is low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Ve Vernon Sandy Loam, 1 To 3 Percent Slopes

Vernon soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 3e.

Vf Vernon Sandy Loam, 3 To 6 Percent Slopes

Vernon soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of residuum. This soil is well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Red Clay Prairie (pe24-32) range site. It is in the nonirrigated land capability classification 4e.

Wa Waldeck Sandy Loam, Occasionally Flooded

Waldeck soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil is in the Subirrigated (pe24-32) range site. It is in the nonirrigated land capability classification 3w.

Wb Waurika Silt Loam, 0 To 1 Percent Slopes

Waurika soil makes up 100 percent of the map unit. This map unit is in the Central Rolling Red Prairies Major Land Resource Area. This soil occurs on a nearly level depression on paleoterrace on river valley. The runoff class is negligible. The parent material consists of old clayey alluvium and/or residuum weathered from shale. This soil is somewhat poorly drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 9 inches. This soil contains a slightly saline horizon. This soil is in the Clay Upland (pe24-32) range site. It is in the nonirrigated land capability classification 2w.

015LS—Ladysmith silty clay loam, 0 to 2 percent slopes

Map Unit Composition

Ladysmith: 90 percent

Component Descriptions

Ladysmith

MLRA: 75 - Central Loess Plains

Landform: Ridge on upland

Hillslope position: Summit, shoulder

Parent material: Clayey alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Impermeable (About 0.00 in/hr)

Available water capacity: Moderate (About 8.7 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Ponding hazard: None

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: High

Ecological site: Clay Upland (pe30-36)

Land capability (nonirrigated): 2s

Typical Profile:

A—0 to 7 inches; silty clay loam

Bt1—7 to 15 inches; silty clay

Bt2—15 to 30 inches; clay

Bck—30 to 38 inches; clay

C—38 to 60 inches; silty clay

Available water capacity: High (About 10.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Clay Upland (pe25-34)

Land capability (irrigated): 2s

Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 5 inches; silt loam

BA—5 to 9 inches; silty clay loam

Bt1—9 to 19 inches; silty clay loam

Bt2—19 to 27 inches; silty clay

Bt3—27 to 38 inches; silty clay

BC—38 to 48 inches; silty clay loam

C—48 to 80 inches; silty clay loam

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

079CR—Crete silt loam, 0 to 1 percent slopes

Map Unit Composition

Crete: 100 percent

Component Descriptions

Crete

MLRA: 75 - Central Loess Plains

Landform: Upland

Parent material: Silty and clayey loess

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

079CT—Crete silt loam, 1 to 3 percent slopes

Map Unit Composition

Crete: 100 percent

Component Descriptions

Crete

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Silty and clayey loess

Slope: 1 to 3 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 10.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Clay Upland (pe25-34)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 5 inches; silt loam
 BA—5 to 9 inches; silty clay loam
 Bt1—9 to 19 inches; silty clay
 Bt2—19 to 27 inches; silty clay
 Bt3—27 to 38 inches; silty clay
 BC—38 to 48 inches; silty clay loam
 C—48 to 80 inches; silt loam

Minor Components
Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses. The high clay content and shrink-swell may limit some practices.

079DE—Detroit silty clay loam, rarely flooded
Map Unit Composition

Detroit: 100 percent

Component Descriptions

Detroit

MLRA: 75 - Central Loess Plains
Landform: River valley, flood plain
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.8 inches)

Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Terrace (pe25-34)
Land capability (irrigated): 1
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 11 inches; silty clay loam
 H2—11 to 36 inches; silty clay
 H3—36 to 60 inches; silty clay loam

079DU—Drummond complex, 0 to 1 percent slopes

Map Unit Composition

Drummond: 75 percent

Component Descriptions

Drummond

MLRA: 79 - Great Bend Sand Plains
Landform: Terrace on river valley
Parent material: Clayey and/or loamy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Negligible
Ecological site: Saline Lowland (pe25-34)
Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 9 inches; loam
 H2—9 to 60 inches; silty clay loam

Minor Components
Carwile

Unnamed Hydric Soils

Unnamed Hydric Soils

079FA—Farnum fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 9.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sandy (pe25-34)

Land capability (irrigated): 1

Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 14 inches; fine sandy loam

H2—14 to 45 inches; clay loam

H3—45 to 60 inches; sandy loam

Minor Components

Carwile

Unnamed Wet Soils

Phase: Loamy, Depression

079FE—Farnum loam, 3 to 6 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe25-34)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; loam

H2—11 to 45 inches; clay loam

H3—45 to 60 inches; sandy loam

079GD—Geary silt loam, 1 to 3 percent slopes

Map Unit Composition

Geary: 100 percent

Component Descriptions

Geary

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Loess

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.1 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Upland (pe25-34)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 9 inches; silt loam

H2—9 to 35 inches;

H3—35 to 60 inches;

079KA—Kaski loam, occasionally flooded**Map Unit Composition**

Kaski: 100 percent

Component Descriptions**Kaski**

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Lowland (pe25-34)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 24 inches; loam

H2—24 to 41 inches; clay loam

H3—41 to 60 inches; clay loam

Minor Components**Unnamed Wet Soils**

Phase: Loamy, Drainageway

079LA—Ladysmith silty clay loam, 0 to 1 percent slopes**Map Unit Composition**

Ladysmith: 100 percent

Component Descriptions**Ladysmith**

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Impermeable (About 0.00 in/hr)

Available water capacity: Moderate (About 8.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 10 inches; silty clay loam

H2—10 to 45 inches; silty clay

H3—45 to 60 inches; silty clay loam

Minor Components**Unnamed Wet Soils**

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

079LB—Ladysmith silty clay loam, 1 to 2 percent slopes**Map Unit Composition**

Ladysmith: 100 percent

Component Descriptions**Ladysmith**

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 1 to 2 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Impermeable (About 0.00 in/hr)

Available water capacity: Moderate (About 8.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silty clay loam

H2—10 to 45 inches; silty clay

H3—45 to 60 inches; silty clay loam

Minor Components
Unnamed Hydric Soils

Unnamed Hydric Soils

079SM—Smolan silty clay loam, 1 to 3 percent slopes

Map Unit Composition

Smolan: 90 percent
Minor components: 10 percent

Component Descriptions

Smolan

MLRA: 75 - Central Loess Plains
Landform: Hillslope on upland
Hillslope position: Footslope
Parent material: Silty and clayey loess
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe25-34)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 8 inches; silty clay loam
H2—8 to 15 inches; silty clay loam
H3—15 to 40 inches; silty clay
H4—40 to 60 inches; silty clay loam

Minor Components

Norge

Composition: About 5 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Labette

Composition: About 5 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe30-36)

095AD—Albion sandy loam, 6 to 15 percent slopes

Map Unit Composition

Albion: 100 percent

Component Descriptions

Albion

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 6 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.8 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 8 inches; sandy loam
H2—8 to 16 inches; sandy loam
H3—16 to 26 inches; coarse sandy loam
H4—26 to 60 inches; gravelly sand

095LA—Lincoln loamy sand, occasionally flooded

Map Unit Composition

Lincoln: 100 percent

Component Descriptions

Lincoln

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 2 percent
Drainage class: Somewhat excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Low (About 3.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional
Depth to seasonal water saturation: About 60 to 72 inches
Runoff class: Negligible
Ecological site: Sandy Lowland (pe24-32)
Land capability (nonirrigated): 6w

Typical Profile:
 H1—0 to 10 inches; loamy fine sand
 H2—10 to 60 inches; stratified fine sand to clay loam

Minor Components
Unnamed Wet Soils
Phase: Sandy, Drainageway

095WA—Waldeck fine sandy loam, occasionally flooded

Map Unit Composition

Waldeck: 100 percent

Component Descriptions

Waldeck
MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 7.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Negligible
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 3w

Typical Profile:
 H1—0 to 25 inches; fine sandy loam
 H2—25 to 42 inches; fine sandy loam
 H3—42 to 60 inches; sand

Minor Components
Unnamed Wet Soils
Phase: Sandy, Depression

191BA—Bethany silt loam, 0 to 1 percent slopes

Map Unit Composition

Bethany: 100 percent

Component Descriptions

Bethany
MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on upland
Parent material: Alluvium and/or loess over shale
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe25-34)
Land capability (nonirrigated): 2c

Typical Profile:
 H1—0 to 6 inches; silt loam
 H2—6 to 17 inches; clay
 H3—17 to 60 inches; clay

191BB—Bethany silt loam, 1 to 3 percent slopes

Map Unit Composition

Bethany: 100 percent

Component Descriptions

Bethany
MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on upland
Parent material: Alluvium and/or loess over shale
Slope: 1 to 3 percent
Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe25-34)
Land capability (nonirrigated): 2e

Typical Profile:
 H1—0 to 6 inches; silt loam
 H2—6 to 17 inches; clay
 H3—17 to 60 inches; clay

191DR—Dale And Reinach silt loams, rarely flooded

Map Unit Composition

Dale: 50 percent
 Reinach: 50 percent

Component Descriptions

Dale

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Terrace (pe24-32)
Land capability (nonirrigated): 1

Typical Profile:
 H1—0 to 21 inches; silt loam
 H2—21 to 60 inches; silt loam

Reinach

MLRA: 79 - Great Bend Sand Plains
Slope: 0 to 1 percent

Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Terrace (pe24-32)
Land capability (nonirrigated): 1

Typical Profile:
 H1—0 to 80 inches; silt loam

191EA—Elandco silty clay loam, rarely flooded

Map Unit Composition

Elandco: 100 percent

Component Descriptions

Elandco

MLRA: 75 - Central Loess Plains, 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.2 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Terrace (pe24-32)
Land capability (nonirrigated): 1

Typical Profile:
 H1—0 to 40 inches; silt loam
 H2—40 to 60 inches; silt loam

Minor Components **Unnamed Hydric Soils**

Unnamed Hydric Soils

Unnamed Wet Soils*Phase: Loamy, Drainageway***191LO—Lesho clay loam,
occasionally flooded****Map Unit Composition**

Lesho: 100 percent

Component Descriptions**Lesho***MLRA: 79 - Great Bend Sand Plains**Landform: Flood plain on river valley**Parent material: Alluvium**Slope: 0 to 1 percent**Drainage class: Somewhat poorly drained**Slowest permeability: Moderately slow (About 0.20 in/hr)**Available water capacity: Moderate (About 7.4 inches)**Shrink-swell potential: Moderate (About 4.5 LEP)**Flooding hazard: Occasional**Depth to seasonal water saturation: About 24 to 48 inches**Runoff class: Negligible**Ecological site: Subirrigated (pe24-32)**Land capability (nonirrigated): 3w**Typical Profile:*

H1—0 to 18 inches; clay loam

H2—18 to 32 inches; clay loam

H3—32 to 60 inches; fine sand

Minor Components**Unnamed Wet Soils***Phase: Loamy, Drainageway***1011—Albion-Shellabarger sandy
loams, 1 to 3 percent slopes****Map Unit Composition**

Albion: 70 percent

Shellabarger: 30 percent

Component Descriptions**Albion***MLRA: 79 - Great Bend Sand Plains**Landform: Paleoterrace on river valley**Parent material: Loamy alluvium**Slope: 1 to 3 percent**Drainage class: Well drained**Slowest permeability: Moderately rapid (About 2.00 in/hr)**Available water capacity: Moderate (About 7.3 inches)**Shrink-swell potential: Low (About 1.5 LEP)**Flooding hazard: None**Depth to seasonal water saturation: More than 6 feet**Runoff class: Low**Ecological site: Sandy (pe21-28)**Land capability (nonirrigated): 3e**Typical Profile:*

Ap—0 to 9 inches; sandy loam

Bt1—9 to 16 inches; sandy loam

Bt2—16 to 27 inches; sandy loam

BC—27 to 48 inches; loamy coarse sand

C—48 to 80 inches; sand

Shellabarger*MLRA: 79 - Great Bend Sand Plains**Landform: Paleoterrace on river valley**Parent material: Loamy alluvium**Slope: 1 to 3 percent**Drainage class: Well drained**Slowest permeability: Moderate (About 0.60 in/hr)**Available water capacity: Moderate (About 8.5 inches)**Shrink-swell potential: Low (About 1.5 LEP)**Flooding hazard: None**Depth to seasonal water saturation: More than 6 feet**Runoff class: Low**Ecological site: Sandy (pe21-28)**Land capability (nonirrigated): 2e**Typical Profile:*

Ap—0 to 7 inches; sandy loam

Bt1—7 to 11 inches; sandy clay loam

Bt2—11 to 19 inches; sandy clay loam

Bt3—19 to 33 inches; sandy loam

BC—33 to 47 inches; coarse sandy loam

C1—47 to 59 inches; loamy sand

C2—59 to 73 inches; sand

C3—73 to 80 inches; sand

Minor Components**Unnamed Wet Soils***General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well*

suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

1070—Avans loam, 0 to 1 percent slopes

Map Unit Composition

Avans: 100 percent

Component Descriptions

Avans

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.8 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Upland (pe21-28)

Land capability (nonirrigated): 1

Typical Profile:

Ap1—0 to 5 inches; loam

Ap2—5 to 10 inches; loam

BA—10 to 14 inches; loam

Bt1—14 to 19 inches; clay loam

Bt2—19 to 30 inches; clay loam

Bt3—30 to 43 inches; loam

Bt4—43 to 53 inches; loam

Btk1—53 to 65 inches; silt loam

Btk2—65 to 80 inches; loam

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

1071—Avans loam, 1 to 3 percent slopes

Map Unit Composition

Avans: 85 percent

Minor components: 15 percent

Component Descriptions

Avans

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.8 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe21-28)

Land capability (nonirrigated): 1

Typical Profile:

Ap1—0 to 5 inches; loam

Ap2—5 to 10 inches; loam

BA—10 to 14 inches; silt loam

Bt1—14 to 19 inches; clay loam
 Bt2—19 to 30 inches; loam
 Bt3—30 to 43 inches; loam
 Bt4—43 to 53 inches; silt loam
 Btk1—53 to 65 inches; silt loam
 Btk2—65 to 80 inches; loam

Minor Components

Ost

Composition: About 15 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage system, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses.

1072—Avans loam, 3 to 7 percent slopes

Map Unit Composition

Avans: 85 percent
 Minor components: 15 percent

Component Descriptions

Avans

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium
Ecological site: Loamy Upland (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap1—0 to 5 inches; loam
 Ap2—5 to 10 inches; loam
 BA—10 to 14 inches; silt loam
 Bt1—14 to 19 inches; clay loam
 Bt2—19 to 30 inches; loam
 Bt3—30 to 43 inches; loam
 Bt4—43 to 53 inches; silt loam
 Btk1—53 to 65 inches; silt loam
 Btk2—65 to 80 inches; loam

Minor Components

Ost

Composition: About 15 percent
Slope: 3 to 6 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some are used for pasture or range. This mapunit is moderately well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. The hazard of water erosion is severe and wind erosion is moderate. Ephemeral gully erosion potential is also severe. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses.

2204—Jamash-Piedmont clay loams, 0 to 1 percent slopes

Map Unit Composition

Jamash: 50 percent
 Piedmont: 50 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 0 to 1 percent

Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Piedmont

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, clayey
Slope: 0 to 1 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe24-32)
Land capability (nonirrigated): 2e

Typical Profile:

Ap1—0 to 4 inches; clay loam
 Ap2—4 to 7 inches; clay loam
 Bt1—7 to 13 inches; clay
 Bt2—13 to 20 inches; clay
 Btk—20 to 24 inches; silty clay
 Bck—24 to 32 inches; silty clay
 Cr—32 to 80 inches; weathered bedrock

Minor Components
Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are used for pasture or range. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of

wind erosion is severe and water erosion is slight. Wind erosion can be controlled through conservation tillage practices. The shallow depth to bedrock and slow permeability can limit some engineering uses of this soil.

2205—Jamash-Piedmont clay loams, 1 to 3 percent slopes

Map Unit Composition

Jamash: 60 percent
 Piedmont: 40 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 1 to 3 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Piedmont

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, clayey
Slope: 1 to 3 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Clay Upland (pe24-32)
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; clay loam
 Ap2—4 to 7 inches; clay loam
 Bt1—7 to 13 inches; clay
 Bt2—13 to 20 inches; clay
 Btk—20 to 24 inches; silty clay
 Bck—24 to 32 inches; silty clay
 Cr—32 to 80 inches; weathered bedrock

Minor Components
Unnamed Wet Soils

General Considerations: Some areas are used as cropland, but most areas are used for pasture or range. Many areas of this map unit are also in the Conservation Reserve Program. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind erosion is severe and water erosion is slight. Wind erosion can be controlled through conservation tillage practices. The shallow depth to bedrock and slow permeability can limit some engineering uses of this soil.

2207—Jamash clay loam, 0 to 8 percent slopes

Map Unit Composition

Jamash: 80 percent
 Minor components: 20 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 0 to 8 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Minor Components
Piedmont

Composition: About 20 percent
Slope: 0 to 8 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Clay Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used for pasture or range. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind erosion is severe and water erosion is moderately severe. The shallow depth to bedrock and slow permeability can limit most engineering uses of this soil.

2381—Kanza-Ninnescah sandy loams, 0 to 2 percent slopes, Commonly flooded

Map Unit Composition

Kanza: 50 percent
 Ninnescah: 50 percent

Component Descriptions

Kanza

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 2 percent

Drainage class: Poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: About 0 to 36 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

A1—0 to 4 inches; sandy loam
 A2—4 to 9 inches; loamy fine sand
 AC—9 to 17 inches; loamy fine sand
 C1—17 to 33 inches; loamy fine sand
 C2—33 to 80 inches; sand

Ninnescah

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Drainage class: Poorly drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 7.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 24 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

Ak1—0 to 6 inches; sandy loam
 Ak2—6 to 14 inches; sandy loam
 Ak3—14 to 19 inches; sandy loam
 Bkg1—19 to 30 inches; sandy loam
 Bkg2—30 to 37 inches; sandy loam
 Cg1—37 to 52 inches; sandy loam
 Cg2—52 to 80 inches; loamy sand

General Considerations: Most areas are in pasture or range. This map unit is poorly suited for the most commonly grown crops. The hazard for wind and water erosion is slight. The water tables, flooding, and depth to sand limit most engineering uses for this mapunit.

2587—Imano clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Imano: 85 percent
 Minor components: 15 percent

Component Descriptions

Imano

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Moderate (About 6.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Ponding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 3w

Typical Profile:

Ap—0 to 10 inches; clay loam
 Bw—10 to 25 inches; loam
 2C1—25 to 55 inches; stratified fine sand to sand
 2C2—55 to 80 inches; coarse sand

Minor Components

Willowbrook

Composition: About 15 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used

for hay production. This map unit is poorly suited for most commonly grown crops. Wheat and alfalfa are the predominant crops. The hazard for water erosion is slight and wind erosion is severe. Wind erosion can be controlled by conservation tillage and residue management. Depth to sand and water tables can limit most engineering uses for this map unit.

2948—Nalim loam, 0 to 1 percent slopes

Map Unit Composition

Nalim: 80 percent
Minor components: 20 percent

Component Descriptions

Nalim

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; loam
Bt1—6 to 9 inches; loam
Bt2—9 to 13 inches; clay loam
Bt3—13 to 21 inches; clay loam
Bt4—21 to 31 inches; clay loam
Bt5—31 to 39 inches; sandy clay loam
Bt6—39 to 44 inches; gravelly sandy clay loam
Bt7—44 to 52 inches; sandy clay loam
BC—52 to 62 inches; loamy coarse sand
C1—62 to 72 inches; gravelly loamy coarse sand
C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

Minor Components

Farnum

Composition: About 20 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

3052—Ost-Clark loams, 1 to 3 percent slopes

Map Unit Composition

Ost: 55 percent
Clark: 45 percent

Component Descriptions

Ost

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 8 inches; loam
Bt1—8 to 12 inches; loam
Bt2—12 to 18 inches; loam
Bk1—18 to 23 inches; clay loam
Bk2—23 to 38 inches; clay loam

B_{Ck}—38 to 54 inches; loam
C—54 to 80 inches; loam

Clark

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Limy Upland (pe21-28)

Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 11 inches; loam

B_w—11 to 16 inches; loam

B_{k1}—16 to 28 inches; loam

B_{k2}—28 to 45 inches; fine sandy loam

B_{Ck1}—45 to 65 inches; fine sandy loam

C_{k2}—65 to 80 inches; very fine sandy loam

Minor Components**Unnamed Wet Soils**

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind erosion is moderate and water erosion is slight. This mapunit is well suited for most engineering practices.

3170—Penalosa silt loam, 0 to 1 percent slopes**Map Unit Composition**

Penalosa: 100 percent

Component Descriptions**Penalosa**

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 10.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Upland (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

Ap₁—0 to 5 inches; silt loam

Ap₂—5 to 10 inches; silt loam

B_{t1}—10 to 14 inches; silty clay loam

B_{t2}—14 to 22 inches; silty clay loam

B_{tss1}—22 to 28 inches; silty clay loam

B_{tss2}—28 to 34 inches; silty clay loam

B_{tss3}—34 to 39 inches; silty clay loam

B_C—39 to 48 inches; silt loam

2B_{tkssb1}—48 to 61 inches; silty clay loam

2B_{tkssb2}—61 to 71 inches; silty clay loam

2B_{tkssb3}—71 to 80 inches; clay loam

Minor Components**Carbika**

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland but some areas are in pasture. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans and irrigated corn are the predominant crops in the area. The hazard of wind and water erosion is slight. The slow permeability and high shrink-swell can limit the engineering uses of the soil.

3171—Penalosa silt loam, 1 to 3 percent slopes**Map Unit Composition**

Penalosa: 100 percent

Component Descriptions**Penalosa**

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap1—0 to 5 inches; silt loam
 Ap2—5 to 10 inches; silty clay loam
 Bt1—10 to 14 inches; silty clay loam
 Bt2—14 to 22 inches; silty clay loam
 Btss1—22 to 28 inches; silty clay loam
 Btss2—28 to 34 inches; silty clay loam
 Btss3—34 to 39 inches; silty clay loam
 BC—39 to 48 inches; silt loam
 2Btkssb1—48 to 61 inches; silty clay loam
 2Btkssb2—61 to 71 inches; silty clay loam
 2Btkssb3—71 to 80 inches; clay loam

Minor Components
Unnamed Wet Soils

General Considerations: Most areas are used for cropland but some areas are in pasture. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans and irrigated corn are the predominant crops in the area. The hazard of wind and water erosion is slight. The slow permeability and high shrink-swell can limit the engineering uses of the soil.

3535—Shellabarger-Nalim complex, 1 to 3 percent slopes

Map Unit Composition

Shellabarger: 55 percent
 Nalim: 45 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent

Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 8.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; sandy loam
 Bt1—7 to 11 inches; sandy clay loam
 Bt2—11 to 19 inches; sandy clay loam
 Bt3—19 to 33 inches; sandy loam
 BC—33 to 47 inches; coarse sandy loam
 C1—47 to 59 inches; loamy sand
 C2—59 to 73 inches; sand
 C3—73 to 80 inches; sand

Nalim

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; loam
 Bt1—6 to 9 inches; loam
 Bt2—9 to 13 inches; clay loam
 Bt3—13 to 21 inches; clay loam
 Bt4—21 to 31 inches; clay loam
 Bt5—31 to 39 inches; sandy clay loam
 Bt6—39 to 44 inches; gravelly sandy clay loam
 Bt7—44 to 52 inches; sandy clay loam
 BC—52 to 62 inches; loamy coarse sand
 C1—62 to 72 inches; gravelly loamy coarse sand
 C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind and water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. These soils are moderately well suited for most engineering uses of these soils.

2Bt2—17 to 33 inches; silty clay
 2Btk1—33 to 53 inches; silty clay loam
 2Btk2—53 to 64 inches; clay loam
 3Bt—64 to 80 inches; sandy clay loam

Minor Components**Saltcreek**

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This map unit is well suited for the most commonly grown crops such as wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. This map unit is moderately well suited for most engineering practices. The potential for high shrink-swell may limit some practices.

3639—Taver loam, 0 to 1 percent slopes**Map Unit Composition**

Taver: 90 percent
 Minor components: 10 percent

Component Descriptions**Taver**

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe21-28)
Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 7 inches; loam
 2Bt1—7 to 17 inches; silty clay loam

3966—Willowbrook fine sandy loam, 0 to 1 percent slopes, occasionally flooded**Map Unit Composition**

Willowbrook: 90 percent
 Minor components: 10 percent

Component Descriptions**Willowbrook**

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.7 inches)
Shrink-swell potential: Low (About 1.7 LEP)
Flooding hazard: Occasional
Ponding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)

Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; fine sandy loam
 Ap2—4 to 9 inches; fine sandy loam
 AB—9 to 13 inches; fine sandy loam
 Bw—13 to 17 inches; fine sandy loam
 Bk1—17 to 19 inches; loam
 Bk2—19 to 26 inches; fine sandy loam
 2C1—26 to 45 inches; coarse sand
 2C2—45 to 51 inches; coarse sand
 2C3—51 to 80 inches; stratified gravelly
 coarse sand to sand

Minor Components

Nickerson

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Ecological site: Sandy (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit. Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

4004—Yaggy fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Yaggy: 95 percent
 Minor components: 5 percent

Component Descriptions

Yaggy

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 4.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Sandy Lowland (pe21-28)
Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 5 inches; fine sandy loam
 Ap2—5 to 11 inches; fine sandy loam
 2C1—11 to 14 inches; stratified very fine sandy loam to silt loam
 3C2—14 to 24 inches; fine sand
 3C3—24 to 31 inches; fine sand
 3C4—31 to 42 inches; fine sand
 3C5—42 to 53 inches; stratified gravelly coarse sand
 3C6—53 to 69 inches; stratified gravelly coarse sand to sand
 3C7—69 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Imano

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit. Most areas are used for pasture or range, some areas are used for

hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 15 inches; sandy loam
H2—15 to 40 inches; sandy clay loam
H3—40 to 60 inches; sandy loam

Aa—Albion-Shellabarger sandy loams, 1 to 4 percent slopes

Minor Components Unnamed Wet Soils

Map Unit Composition

Albion: 70 percent
Shellabarger: 30 percent

Ab—Albion And Shellabarger sandy loams, 7 to 15 percent slopes

Map Unit Composition

Albion: 50 percent
Shellabarger: 50 percent

Component Descriptions

Albion

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 4 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; sandy loam
H2—9 to 19 inches; sandy loam
H3—19 to 26 inches; coarse sandy loam
H4—26 to 60 inches; sand

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 4 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 8.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low

Component Descriptions

Albion

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 9 inches; sandy loam
H2—9 to 19 inches; sandy loam
H3—19 to 26 inches; coarse sandy loam
H4—26 to 60 inches; sand

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

H1—0 to 15 inches; sandy loam
 H2—15 to 40 inches; sandy clay loam
 H3—40 to 60 inches; sand

Minor Components
Unnamed Wet Soils

AED—Arents, Earthen Dam

Ba—Blanket silt loam, 0 to 1 percent slopes

Map Unit Composition

Blanket: 100 percent

Component Descriptions

Blanket

MLRA: 80A - Central Rolling Red Prairies
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 14 inches; silt loam
 H2—14 to 34 inches; silty clay

H3—34 to 60 inches; silty clay loam

Minor Components
Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

Bb—Blanket silt loam, 1 to 3 percent slopes

Map Unit Composition

Blanket: 100 percent

Component Descriptions

Blanket

MLRA: 80A - Central Rolling Red Prairies
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 14 inches; silt loam
 H2—14 to 34 inches; silty clay
 H3—34 to 60 inches; silty clay loam

Minor Components
Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

**BRR—Brewer silty clay loam,
rarely flooded****Map Unit Composition**

Brewer: 85 percent
Minor components: 15 percent

Component Descriptions**Brewer**

MLRA: 80A - Central Rolling Red Prairies
Landform: Flood plain on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Terrace (pe25-34)
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 14 inches; silty clay loam
H2—14 to 66 inches; silty clay

Minor Components**Osage**

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe25-34)

Verdigris

Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Moderately well drained
Ecological site: Loamy Lowland (pe30-36)

**Ca—Canadian fine sandy loam,
rarely flooded****Map Unit Composition**

Canadian: 100 percent

Component Descriptions**Canadian**

MLRA: 80A - Central Rolling Red Prairies
Landform: River valley, flood plain
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 8.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Sandy Terrace (pe24-32)
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 20 inches; fine sandy loam
H2—20 to 35 inches; fine sandy loam
H3—35 to 60 inches; fine sandy loam

Minor Components**Unnamed Wet Soils**

Phase: Sandy, Depression

Unnamed Wet Soils

Phase: Sandy, Drainageway

Unnamed Wet Soils

Phase: Sandy, Drainageway Flooded

**Cb—Canadian-Waldeck fine sandy
loams, rarely flooded****Map Unit Composition**

Canadian: 70 percent
Waldeck: 30 percent

Component Descriptions**Canadian**

MLRA: 80A - Central Rolling Red Prairies
Landform: River valley, flood plain
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 8.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sandy Terrace (pe24-32)

Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 20 inches; fine sandy loam

H2—20 to 35 inches; fine sandy loam

H3—35 to 60 inches; fine sandy loam

Waldeck

MLRA: 80A - Central Rolling Red Prairies

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Moderate (About 6.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe24-32)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 14 inches; fine sandy loam

H2—14 to 27 inches; sandy loam

H3—27 to 60 inches; sand

Minor Components

Unnamed Wet Soils

Phase: Sandy, Drainageway Flooded

Unnamed Wet Soils

Phase: Sandy, Depression

Unnamed Wet Soils

Phase: Sandy, Drainageway

Cc—Carwile fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Carwile: 100 percent

Component Descriptions

Carwile

MLRA: 80A - Central Rolling Red Prairies

Landform: Depression on paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.4 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Negligible

Ecological site: Sandy (pe24-32)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 18 inches; fine sandy loam

H2—18 to 24 inches; clay loam

H3—24 to 47 inches; clay loam

H4—47 to 60 inches; clay loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Depression

Cd—Clark-Ost clay loams, 1 to 4 percent slopes
Map Unit Composition

Clark: 75 percent

Ost: 25 percent

Component Descriptions

Clark

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 4 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Limy Upland (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; clay loam
H2—11 to 60 inches; clay loam

Ost

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 4 percent

Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)

Available water capacity: High (About 10.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 7 inches; clay loam
H2—7 to 15 inches; clay loam
H3—15 to 19 inches; clay loam
H4—19 to 60 inches; clay loam

Ce—Clime silty clay, 3 to 6 percent slopes**Map Unit Composition**

Clime: 100 percent

Component Descriptions**Clime**

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Silty and clayey residuum weathered from shale, calcareous

Slope: 3 to 6 percent

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

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Low (About 3.9 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: High

Ecological site: Limy Upland (pe25-34)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 9 inches; silty clay
H2—9 to 27 inches; silty clay
Cr—27 to 34 inches; unweathered bedrock

Minor Components**Unnamed Hydric Soils****Unnamed Wet Soils**

Phase: Clayey, Depression

Ea—Elandco silt loam, rarely flooded**Map Unit Composition**

Elandco: 100 percent

Component Descriptions**Elandco**

MLRA: 75 - Central Loess Plains, 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Terrace (pe24-32)

Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 40 inches; silt loam
H2—40 to 60 inches; silt loam

Minor Components**Unnamed Hydric Soils****Unnamed Hydric Soils****Unnamed Wet Soils**

Phase: Loamy, Drainageway

Eb—Elandco silt loam, occasionally flooded

Map Unit Composition

Elandco: 100 percent

Component Descriptions

Elandco

MLRA: 75 - Central Loess Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Lowland (pe24-32)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 40 inches; silt loam

H2—40 to 60 inches; silt loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Drainageway

Unnamed Wet Soils

Phase: Loamy, Drainageway

Unnamed Wet Soils

Phase: Loamy, Drainageway

Ec—Elandco silt loam, frequently flooded

Map Unit Composition

Elandco: 100 percent

Component Descriptions

Elandco

MLRA: 75 - Central Loess Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Lowland (pe24-32)

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 40 inches; silt loam

H2—40 to 60 inches; silt loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Depression

Unnamed Wet Soils

Phase: Loamy, Drainageway

Unnamed Wet Soils

Phase: Loamy, Drainageway

Fa—Farnum loam, 0 to 1 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 1
Land capability (nonirrigated): 1

Typical Profile:
 H1—0 to 14 inches; loam
 H2—14 to 46 inches; clay loam
 H3—46 to 60 inches; clay loam

Minor Components
Carwile

Unnamed Wet Soils
Phase: Loamy, Depression

Unnamed Wet Soils
Phase: Loamy, Drainageway

Fb—Farnum loam, 1 to 3 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum
MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
 H1—0 to 14 inches; loam
 H2—14 to 46 inches; clay loam
 H3—46 to 60 inches; clay loam

Minor Components
Unnamed Wet Soils
Phase: Loamy, Depression

Unnamed Wet Soils
Phase: Loamy, Drainageway

Fc—Farnum loam, sandy Substratum, 0 to 1 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum
MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Moderate (About 8.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 1
Land capability (nonirrigated): 1

Typical Profile:
 H1—0 to 14 inches; loam
 H2—14 to 28 inches; clay loam
 H3—28 to 40 inches; clay loam
 H4—40 to 60 inches; clay loam

Minor Components
Unnamed Wet Soils
Phase: Loamy, Depression

Unnamed Wet Soils
Phase: Loamy, Drainageway

Ga—Goessel silty clay, 0 to 1 percent slopes

Map Unit Composition

Goessel: 100 percent

Component Descriptions

Goessel

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 7.7 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 36 inches

Runoff class: Negligible

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 5 inches; silty clay

H2—5 to 60 inches; silty clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Depression

Gb—Goessel silty clay, 1 to 2 percent slopes

Map Unit Composition

Goessel: 100 percent

Component Descriptions

Goessel

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Clayey alluvium

Slope: 1 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 7.7 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 36 inches

Runoff class: Very low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 5 inches; silty clay

H2—5 to 60 inches; silty clay

Ia—Irwin silty clay loam, 1 to 3 percent slopes

Map Unit Composition

Irwin: 100 percent

Component Descriptions

Irwin

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Residuum

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.5 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 13 inches; silty clay loam

H2—13 to 52 inches; silty clay

H3—52 to 60 inches; silty clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

Ib—Irwin silty clay loam, 3 to 6 percent slopes

Map Unit Composition

Irwin: 100 percent

Component Descriptions

Irwin

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Residuum

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.5 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 13 inches; silty clay loam

H2—13 to 52 inches; silty clay

H3—52 to 60 inches; silty clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

Ic—Irwin silty clay loam, 2 to 6 percent slopes, eroded

Map Unit Composition

Irwin: 100 percent

Component Descriptions

Irwin

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

Parent material: Residuum

Slope: 2 to 6 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 7.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 6 inches; silty clay loam

H2—6 to 52 inches; silty clay

H3—52 to 60 inches; silty clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

INT—Aquolls

Map Unit Composition

Aquolls: 100 percent

Component Descriptions

Aquolls

MLRA: -

Landform: Depression on terrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Very poorly drained

Flooding hazard: None

Ponding hazard: Occasional

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Negligible

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 72 inches; variable

General Considerations: This map unit was formerly labeled as an Intermittent Water spot symbol. These depressional areas contain soils that are occasionally ponded for long duration.

KAA—Kaski loam, occasionally flooded**Map Unit Composition**

Kaski: 100 percent

Component Descriptions**Kaski**

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Lowland (pe25-34)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 24 inches; loam

H2—24 to 41 inches; clay loam

H3—41 to 60 inches; clay loam

Minor Components**Unnamed Wet Soils**

Phase: Loamy, Drainageway

La—Lesho loam, occasionally flooded**Map Unit Composition**

Lesho: 100 percent

Component Descriptions**Lesho**

MLRA: 80A - Central Rolling Red Prairies

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderately slow (About 0.20 in/hr)

Available water capacity: Moderate (About 7.1 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe24-32)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 10 inches; loam

H2—10 to 27 inches; loam

H3—27 to 60 inches; fine sand

Minor Components**Plevna****Unnamed Hydric Soils****Unnamed Hydric Soils****Lb—Lincoln Soils, frequently flooded****Map Unit Composition**

Lincoln: 100 percent

Component Descriptions**Lincoln**

MLRA: 80A - Central Rolling Red Prairies

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat excessively drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 3.6 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: About 60 to 72 inches

Runoff class: Negligible

Ecological site: Sandy Lowland (pe24-32)

Land capability (nonirrigated): 6w

Typical Profile:

H1—0 to 8 inches; fine sandy loam

H2—8 to 60 inches; stratified fine sand to clay loam

Minor Components
Plevna

Unnamed Hydric Soils

Unnamed Wet Soils

Phase: Sandy, Drainageway Flooded

M-W—Miscellaneous Water

Map Unit Composition

Miscellaneous Water: 100 percent

Component Descriptions

Miscellaneous Water

MLRA: -

Depth to seasonal water saturation: More than 6 feet

Ma—Milan loam, 1 to 3 percent slopes

Map Unit Composition

Milan: 100 percent

Component Descriptions

Milan

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)

Available water capacity: High (About 11.0 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; loam

H2—11 to 60 inches; clay loam

Mb—Milan loam, 3 to 6 percent slopes

Map Unit Composition

Milan: 100 percent

Component Descriptions

Milan

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)

Available water capacity: High (About 11.0 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 11 inches; loam

H2—11 to 60 inches; clay loam

Mc—Milan clay loam, 2 to 6 percent slopes, eroded

Map Unit Composition

Milan: 100 percent

Component Descriptions

Milan

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium
Slope: 2 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 6 inches; clay loam
 H2—6 to 60 inches; clay loam

Na—Naron fine sandy loam, 0 to 2 percent slopes

Map Unit Composition

Naron: 100 percent

Component Descriptions

Naron

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Loamy eolian deposits
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Sandy (pe24-32)
Land capability (irrigated): 1
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 8 inches; fine sandy loam
 H2—8 to 50 inches; sandy clay loam
 H3—50 to 60 inches; fine sand

Minor Components

Unnamed Wet Soils

Phase: Loamy, Drainageway

Unnamed Wet Soils

Phase: Loamy, Depression

Oc—Wellsford clay loam, 1 to 3 percent slopes

Map Unit Composition

Wellsford: 100 percent

Component Descriptions

Wellsford

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum
Slope: 1 to 3 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 1.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Red Clay Prairie (pe24-32)
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 7 inches; clay loam
 H2—7 to 15 inches; silty clay
 H3—15 to 20 inches; weathered bedrock

Od—Wellsford-Rock outcrop complex, 3 to 10 percent slopes

Map Unit Composition

Wellsford: 60 percent
 Rock outcrop: 40 percent

Component Descriptions

Wellsford

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum
Slope: 3 to 10 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 1.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Red Clay Prairie (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:
 H1—0 to 7 inches; clay loam
 H2—7 to 15 inches; silty clay
 H3—15 to 20 inches; weathered bedrock

Rock outcrop

MLRA: 80A - Central Rolling Red Prairies
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Land capability (nonirrigated): 8

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Seep

Pa—Pits

Pb—Plevna fine sandy loam, frequently flooded

Map Unit Composition

Plevna: 100 percent

Component Descriptions

Plevna

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley

Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Negligible
Ecological site: Subirrigated (pe24-32)
Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 9 inches; fine sandy loam
 H2—9 to 35 inches; sandy loam
 H3—35 to 60 inches; fine sand

Minor Components

Unnamed Wet Soils

Phase: Sandy, Drainageway

Unnamed Wet Soils

Phase: Sandy, Depression

Pc—Pratt loamy fine sand, 1 to 5 percent slopes

Map Unit Composition

Pratt: 100 percent

Component Descriptions

Pratt

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 1 to 7 percent
Drainage class: Well drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe24-32)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 18 inches; loamy fine sand
 H2—18 to 36 inches; loamy fine sand
 H3—36 to 60 inches; fine sand

Minor Components**Carwile****Unnamed Wet Soils**

Phase: Sandy, Depression

Pd—Pratt-Tivoli complex, 5 to 30 percent slopes**Map Unit Composition**

Pratt: 65 percent

Tivoli: 35 percent

Component Descriptions**Pratt**

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 5 to 12 percent

Drainage class: Well drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Moderate (About 6.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sands (pe24-32)

Land capability (irrigated): 3e

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 18 inches; loamy fine sand
 H2—18 to 36 inches; loamy fine sand
 H3—36 to 60 inches; fine sand

Tivoli

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 5 to 30 percent

Drainage class: Excessively drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 3.3 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sands (pe24-32)

Land capability (nonirrigated): 7e

Typical Profile:

H1—0 to 10 inches; loamy fine sand
 H2—10 to 60 inches; fine sand

Minor Components**Unnamed Wet Soils**

Phase: Sandy, Depression

Ra—Renfrow silty clay loam, 1 to 3 percent slopes**Map Unit Composition**

Renfrow: 100 percent

Component Descriptions**Renfrow**

MLRA: 80A - Central Rolling Red Prairies

Landform: Hillslope on upland

Parent material: Residuum

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 13 inches; silty clay loam
 H3—13 to 60 inches; silty clay

Rb—Renfrow silty clay loam, 3 to 6 percent slopes

Map Unit Composition

Renfrow: 100 percent

Component Descriptions

Renfrow

MLRA: 80A - Central Rolling Red Prairies

Landform: Hillslope on upland

Parent material: Residuum

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 9 inches; silty clay loam

H2—9 to 13 inches; silty clay loam

H3—13 to 60 inches; silty clay

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 9 inches; clay loam

H2—9 to 13 inches; silty clay loam

H3—13 to 60 inches; silty clay

Wellsford

MLRA: 80A - Central Rolling Red Prairies

Landform: Pediment on upland

Parent material: Residuum

Slope: 1 to 4 percent

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

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Very low (About 1.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 7 inches; clay loam

H2—7 to 15 inches; silty clay

H3—15 to 20 inches; weathered bedrock

Rc—Renfrow-Wellsford clay loams, 1 to 4 percent slopes

Map Unit Composition

Renfrow: 65 percent

Wellsford: 35 percent

Component Descriptions

Renfrow

MLRA: 80A - Central Rolling Red Prairies

Landform: Hillslope on upland

Parent material: Residuum

Slope: 1 to 4 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Rd—Rosehill silty clay, 1 to 3 percent slopes

Map Unit Composition

Rosehill: 100 percent

Component Descriptions

Rosehill

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Residuum

Slope: 1 to 3 percent

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

Drainage class: Moderately well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Low (About 3.7 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 8 inches; silty clay

H2—8 to 30 inches; silty clay

H3—30 to 34 inches; unweathered bedrock

Sa—Shellabarger sandy loam, 1 to 3 percent slopes

Map Unit Composition

Shellabarger: 100 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe24-32)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 15 inches; sandy loam

H2—15 to 40 inches; sandy clay loam

H3—40 to 60 inches; sand

Sb—Shellabarger sandy loam, 3 to 6 percent slopes

Map Unit Composition

Shellabarger: 100 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 15 inches; sandy loam

H2—15 to 40 inches; sandy clay loam

H3—40 to 60 inches; sand

Sc—Shellabarger sandy loam, 3 to 6 percent slopes, eroded

Map Unit Composition

Shellabarger: 100 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet

Runoff class: Low
Ecological site: Sandy (pe24-32)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 15 inches; sandy loam
 H2—15 to 40 inches; sandy clay loam
 H3—40 to 60 inches; sand

Ta—Tabler silty clay loam, 0 to 1 percent slopes

Map Unit Composition

Tabler: 100 percent

Component Descriptions

Tabler

MLRA: 75 - Central Loess Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low
Ecological site: Clay Upland (pe25-34)
Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 9 inches; silty clay loam
 H2—9 to 32 inches; silty clay
 H3—32 to 60 inches; silty clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

Tb—Tabler-Drummond complex, 0 to 1 percent slopes

Map Unit Composition

Tabler: 60 percent
 Drummond: 40 percent

Component Descriptions

Tabler

MLRA: 80A - Central Rolling Red Prairies
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Clay Upland (pe24-32)
Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 9 inches; silt loam
 H2—9 to 32 inches; silty clay
 H3—32 to 60 inches; silty clay

Drummond

MLRA: 80A - Central Rolling Red Prairies
Landform: Terrace on river valley
Parent material: Clayey and/or loamy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 72 inches
Runoff class: Negligible
Ecological site: Saline Lowland (pe24-32)
Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 8 inches; silt loam
 H2—8 to 48 inches; silty clay
 H3—48 to 60 inches; variable

Minor Components
Carwile

Unnamed Wet Soils
Phase: Clayey, Drainageway

Unnamed Wet Soils
Phase: Clayey, Depression

Ua—Urban land-Canadian complex, 0 to 3 percent slopes

Map Unit Composition

Urban land: 70 percent
 Canadian: 30 percent

Component Descriptions

Urban land

MLRA: 80A - Central Rolling Red Prairies
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet

Canadian

MLRA: 80A - Central Rolling Red Prairies
Landform: Flood plain, river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 8.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 20 inches; fine sandy loam
 H2—20 to 35 inches; fine sandy loam
 H3—35 to 60 inches; fine sandy loam

Ub—Urban land-Elandco complex, 0 to 1 percent slopes

Map Unit Composition

Urban land: 75 percent
 Elandco: 25 percent

Component Descriptions

Urban land

MLRA: 80A - Central Rolling Red Prairies
Depth to seasonal water saturation: More than 6 feet

Elandco

MLRA: 80A - Central Rolling Red Prairies
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.2 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 40 inches; silt loam
 H2—40 to 60 inches; silty clay loam

Uc—Urban land-Farnum complex, 0 to 3 percent slopes

Map Unit Composition

Urban land: 70 percent
 Farnum: 30 percent

Component Descriptions

Urban land

MLRA: 80A - Central Rolling Red Prairies
Depth to seasonal water saturation: More than 6 feet

Farnum*MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Alluvium*Slope:* 0 to 3 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 10.4 inches)*Shrink-swell potential:* Moderate (About 4.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very low*Land capability (irrigated):* 2e*Land capability (nonirrigated):* 2e*Typical Profile:*

H1—0 to 14 inches; loam

H2—14 to 28 inches;

H3—28 to 40 inches; clay loam

H4—40 to 60 inches; clay loam

Ud—Urban land-Irwin complex, 1 to 3 percent slopes**Map Unit Composition**

Urban land: 70 percent

Irwin: 30 percent

Component Descriptions**Urban land***MLRA:* 75 - Central Loess Plains*Depth to seasonal water saturation:* More than 6 feet**Irwin***MLRA:* 75 - Central Loess Plains*Landform:* Paleoterrace on upland*Parent material:* Residuum*Slope:* 1 to 3 percent*Drainage class:* Well drained*Slowest permeability:* Very slow (About 0.00 in/hr)*Available water capacity:* Moderate (About 8.5 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very low*Land capability (nonirrigated):* 3e*Typical Profile:*

H1—0 to 13 inches; silty clay loam

H2—13 to 52 inches; silty clay

H3—52 to 60 inches; silty clay

Ue—Urban land-Tabler complex, 0 to 1 percent slopes**Map Unit Composition**

Urban land: 70 percent

Tabler: 30 percent

Component Descriptions**Urban land***MLRA:* 80A - Central Rolling Red Prairies*Depth to seasonal water saturation:* More than 6 feet**Tabler***MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Clayey alluvium*Slope:* 0 to 1 percent*Drainage class:* Moderately well drained*Slowest permeability:* Very slow (About 0.00 in/hr)*Available water capacity:* High (About 9.8 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Negligible*Land capability (nonirrigated):* 2s*Typical Profile:*

H1—0 to 9 inches; silty clay loam

H2—9 to 32 inches; silty clay

H3—32 to 60 inches; silty clay

Va—Vanoss silt loam, 0 to 1 percent slopes

Map Unit Composition

Vanoss: 100 percent

Component Descriptions

Vanoss

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 1

Typical Profile:

H1—0 to 13 inches; silt loam

H2—13 to 16 inches; silty clay loam

H3—16 to 60 inches; silty clay loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Drainageway

Unnamed Wet Soils

Phase: Loamy, Depression

Vb—Vanoss silt loam, 1 to 3 percent slopes

Map Unit Composition

Vanoss: 100 percent

Component Descriptions

Vanoss

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 13 inches; silt loam

H2—13 to 16 inches; silty clay loam

H3—16 to 60 inches; silty clay loam

Vc—Vanoss silt loam, 3 to 6 percent slopes

Map Unit Composition

Vanoss: 100 percent

Component Descriptions

Vanoss

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 13 inches; silt loam

H2—13 to 16 inches; silty clay loam

H3—16 to 60 inches; silty clay loam

Vd—Vanoss silt loam, 3 to 6 percent slopes, eroded

Map Unit Composition

Vanoss: 100 percent

Component Descriptions

Vanoss

MLRA: 80A - Central Rolling Red Prairies

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 7 inches; silt loam

H2—7 to 16 inches; silty clay loam

H3—16 to 60 inches; silty clay loam

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Low (About 5.4 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 8 inches; sandy loam

H2—8 to 13 inches; sandy clay loam

H3—13 to 28 inches; silty clay

H4—28 to 60 inches;

Vf—Vernon sandy loam, 3 to 6 percent slopes

Map Unit Composition

Vernon: 100 percent

Component Descriptions

Vernon

MLRA: 80A - Central Rolling Red Prairies

Landform: Hillslope on upland

Parent material: Residuum

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Low (About 5.4 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Red Clay Prairie (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 8 inches; sandy loam

H2—8 to 13 inches; sandy clay loam

H3—13 to 28 inches; silty clay

H4—28 to 60 inches;

Ve—Vernon sandy loam, 1 to 3 percent slopes

Map Unit Composition

Vernon: 100 percent

Component Descriptions

Vernon

MLRA: 80A - Central Rolling Red Prairies

Landform: Hillslope on upland

Parent material: Residuum

Slope: 1 to 3 percent

Drainage class: Well drained

W—Water

**Wa—Waldeck sandy loam,
occasionally flooded****Map Unit Composition**

Waldeck: 100 percent

Component Descriptions**Waldeck**

MLRA: 80A - Central Rolling Red Prairies

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Moderate (About 6.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe24-32)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 14 inches; sandy loam

H2—14 to 27 inches; sandy loam

H3—27 to 60 inches; sand

Minor Components**Plevna****Unnamed Wet Soils**

Phase: Sandy, Depression

**Wb—Waurika silt loam, 0 to 1
percent slopes****Map Unit Composition**

Waurika: 100 percent

Component Descriptions**Waurika**

MLRA: 80A - Central Rolling Red Prairies

Landform: Depression on paleoterrace on river valley

Parent material: Old clayey alluvium and/or residuum weathered from shale

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: High (About 9.2 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 12 inches

Runoff class: Negligible

Ecological site: Clay Upland (pe24-32)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 15 inches; silt loam

H2—15 to 40 inches; silty clay

H3—40 to 53 inches; silty clay

H4—53 to 60 inches; silty clay

Minor Components**Unnamed Wet Soils**

Phase: Clayey, Depression

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in the following table. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in the "Acres and Proportionate Extent of Soils" table. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in other tables in this document."

Map symbol	Mapunit name	Farmland Classification
015LS	Ladysmith silty clay loam, 0 to 2 percent slopes	All areas are prime farmland
079CR	Crete silt loam, 0 to 1 percent slopes	All areas are prime farmland
079CT	Crete silt loam, 1 to 3 percent slopes	All areas are prime farmland
079DE	Detroit silty clay loam, rarely flooded	All areas are prime farmland
079FA	Farnum fine sandy loam, 0 to 1 percent slopes	All areas are prime farmland
079FE	Farnum loam, 3 to 6 percent slopes	All areas are prime farmland
079GD	Geary silt loam, 1 to 3 percent slopes	All areas are prime farmland
079KA	Kaski loam, occasionally flooded	All areas are prime farmland
079LA	Ladysmith silty clay loam, 0 to 1 percent slopes	All areas are prime farmland
079LB	Ladysmith silty clay loam, 1 to 2 percent slopes	All areas are prime farmland
079SM	Smolan silty clay loam, 1 to 3 percent slopes	All areas are prime farmland
095WA	Waldeck fine sandy loam, occasionally flooded	All areas are prime farmland
191BA	Bethany silt loam, 0 to 1 percent slopes	All areas are prime farmland
191BB	Bethany silt loam, 1 to 3 percent slopes	All areas are prime farmland
191DR	Dale and reinach silt loams, rarely flooded	All areas are prime farmland
191EA	Elandco silty clay loam, rarely flooded	All areas are prime farmland
191LO	Lesho clay loam, occasionally flooded	All areas are prime farmland
1011	Albion-shellabarger sandy loams, 1 to 3 percent slopes	All areas are prime farmland
1070	Avans loam, 0 to 1 percent slopes	All areas are prime farmland
1071	Avans loam, 1 to 3 percent slopes	All areas are prime farmland
1072	Avans loam, 3 to 7 percent slopes	All areas are prime farmland
2587	Imano clay loam, 0 to 1 percent slopes, occasionally flooded	All areas are prime farmland
2948	Nalim loam, 0 to 1 percent slopes	All areas are prime farmland
3052	Ost-clark loams, 1 to 3 percent slopes	All areas are prime farmland
3170	Penalosa silt loam, 0 to 1 percent slopes	All areas are prime farmland
3171	Penalosa silt loam, 1 to 3 percent slopes	All areas are prime farmland
3535	Shellabarger-nalim complex, 1 to 3 percent slopes	All areas are prime farmland
3639	Taver loam, 0 to 1 percent slopes	All areas are prime farmland
Ba	Blanket silt loam, 0 to 1 percent slopes	All areas are prime farmland
Bb	Blanket silt loam, 1 to 3 percent slopes	All areas are prime farmland
BBR	Brewer silty clay loam, rarely flooded	All areas are prime farmland
Ca	Canadian fine sandy loam, rarely flooded	All areas are prime farmland
Cb	Canadian-waldeck fine sandy loams, rarely flooded	All areas are prime farmland
Cd	Clark-ost clay loams, 1 to 4 percent slopes	All areas are prime farmland
Ea	Elandco silt loam, rarely flooded	All areas are prime farmland
Eb	Elandco silt loam, occasionally flooded	All areas are prime farmland
Fa	Farnum loam, 0 to 1 percent slopes	All areas are prime farmland
Fb	Farnum loam, 1 to 3 percent slopes	All areas are prime farmland
Fc	Farnum loam, sandy substratum, 0 to 1 percent slopes	All areas are prime farmland
Ga	Goessel silty clay, 0 to 1 percent slopes	All areas are prime farmland
Gb	Goessel silty clay, 1 to 2 percent slopes	All areas are prime farmland
Ia	Irwin silty clay loam, 1 to 3 percent slopes	All areas are prime farmland
Ib	Irwin silty clay loam, 3 to 6 percent slopes	All areas are prime farmland
KAA	Kaski loam, occasionally flooded	All areas are prime farmland
La	Lesho loam, occasionally flooded	All areas are prime farmland
Ma	Milan loam, 1 to 3 percent slopes	All areas are prime farmland
Mb	Milan loam, 3 to 6 percent slopes	All areas are prime farmland
Mc	Milan clay loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
Na	Naron fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland
Ra	Renfrow silty clay loam, 1 to 3 percent slopes	All areas are prime farmland
Rb	Renfrow silty clay loam, 3 to 6 percent slopes	All areas are prime farmland
Sa	Shellabarger sandy loam, 1 to 3 percent slopes	All areas are prime farmland
Sb	Shellabarger sandy loam, 3 to 6 percent slopes	All areas are prime farmland
Sc	Shellabarger sandy loam, 3 to 6 percent slopes, eroded	All areas are prime farmland
Ta	Tabler silty clay loam, 0 to 1 percent slopes	All areas are prime farmland
Va	Vanoss silt loam, 0 to 1 percent slopes	All areas are prime farmland
Vb	Vanoss silt loam, 1 to 3 percent slopes	All areas are prime farmland
Vc	Vanoss silt loam, 3 to 6 percent slopes	All areas are prime farmland
Vd	Vanoss silt loam, 3 to 6 percent slopes, eroded	All areas are prime farmland
Wa	Waldeck sandy loam, occasionally flooded	All areas are prime farmland
Wb	Waurika silt loam, 0 to 1 percent slopes	All areas are prime farmland
Aa	Albion-shellabarger sandy loams, 1 to 4 percent slopes	Prime farmland if irrigated

SOIL RATING FOR PLANT GROWTH, modified 1998
Sedgwick County, Kansas

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The "Soil Rating for Plant Growth, modified 1998" (SRPG) is a relative rating of the capacity of a soil to produce a specific plant under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yields, the net returns from crops, land assessment values, and taxes and to perform risk analysis when land management decisions are made. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Map symbol	Soil name	Crop Index
015LS	Ladysmith Silty Clay Loam, 0 To 2 Percent Slopes-----	69
079CR	Crete Silt Loam, 0 To 1 Percent Slopes-----	70
079CT	Crete Silt Loam, 1 To 3 Percent Slopes-----	69
079DE	Detroit Silty Clay Loam, Rarely Flooded-----	73
079DU	Drummond Complex, 0 To 1 Percent Slopes-----	31
079FA	Farnum Fine Sandy Loam, 0 To 1 Percent Slopes-----	73
079FE	Farnum Loam, 3 To 6 Percent Slopes-----	73
079GD	Geary Silt Loam, 1 To 3 Percent Slopes-----	81
079KA	Kaski Loam, Occasionally Flooded-----	75
079LA	Ladysmith Silty Clay Loam, 0 To 1 Percent Slopes-----	68
079LB	Ladysmith Silty Clay Loam, 1 To 2 Percent Slopes-----	67
079SM	Smolan Silty Clay Loam, 1 To 3 Percent Slopes-----	77
095AD	Albion Sandy Loam, 6 To 15 Percent Slopes-----	36
095LA	Lincoln Loamy Sand, Occasionally Flooded-----	23
095WA	Waldeck Fine Sandy Loam, Occasionally Flooded-----	45
1011	Albion-Shellabarger Sandy Loams, 1 To 3 Percent Slopes-----	60
1070	Avans Loam, 0 To 1 Percent Slopes-----	65
1071	Avans Loam, 1 To 3 Percent Slopes-----	60
1072	Avans Loam, 3 To 7 Percent Slopes-----	57
191BA	Bethany Silt Loam, 0 To 1 Percent Slopes-----	68
191BB	Bethany Silt Loam, 1 To 3 Percent Slopes-----	68
191DR	Dale And Reinach Silt Loams, Rarely Flooded-----	73
191EA	Elandco Silty Clay Loam, Rarely Flooded-----	63
191LO	Lesho Clay Loam, Occasionally Flooded-----	53
2204	Jamash-Piedmont Clay Loams, 0 To 1 Percent Slopes-----	28
2205	Jamash-Piedmont Clay Loams, 1 To 3 Percent Slopes-----	24
2207	Jamash Clay Loam, 0 To 8 Percent Slopes-----	15
2381	Kanza-Ninnescah Sandy Loams, 0 To 2 Percent Slopes, Commonly Flooded-----	35
2587	Imano Clay Loam, 0 To 1 Percent Slopes, Occasionally Flooded-----	45
2948	Nalim Loam, 0 To 1 Percent Slopes-----	77
3052	Ost-Clark Loams, 1 To 3 Percent Slopes-----	34
3170	Penalosa Silt Loam, 0 To 1 Percent Slopes-----	75
3171	Penalosa Silt Loam, 1 To 3 Percent Slopes-----	75
3535	Shellabarger-Nalim Complex, 1 To 3 Percent Slopes-----	71
3639	Taver Loam, 0 To 1 Percent Slopes-----	66
3966	Willowbrook Fine Sandy Loam, 0 To 1 Percent Slopes, Occasionally Flooded-----	44
4004	Yaggy Fine Sandy Loam, 0 To 1 Percent Slopes-----	33
AED	Arents, Earthen Dam-----	0
Aa	Albion-Shellabarger Sandy Loams, 1 To 4 Percent Slopes-----	51
Ab	Albion And Shellabarger Sandy Loams, 7 To 15 Percent Slopes-----	49
BRR	Brewer Silty Clay Loam, Rarely Flooded-----	73
Ba	Blanket Silt Loam, 0 To 1 Percent Slopes-----	70
Bb	Blanket Silt Loam, 1 To 3 Percent Slopes-----	69
Ca	Canadian Fine Sandy Loam, Rarely Flooded-----	56
Cb	Canadian-Waldeck Fine Sandy Loams, Rarely Flooded-----	50
Cc	Carwile Fine Sandy Loam, 0 To 1 Percent Slopes-----	22
Cd	Clark-Ost Clay Loams, 1 To 4 Percent Slopes-----	36
Ce	Clime Silty Clay, 3 To 6 Percent Slopes-----	28
Ea	Elandco Silt Loam, Rarely Flooded-----	63
Eb	Elandco Silt Loam, Occasionally Flooded-----	58
Ec	Elandco Silt Loam, Frequently Flooded-----	46
Fa	Farnum Loam, 0 To 1 Percent Slopes-----	76
Fb	Farnum Loam, 1 To 3 Percent Slopes-----	75
Fc	Farnum Loam, Sandy Substratum, 0 To 1 Percent Slopes-----	75
Ga	Goessel Silty Clay, 0 To 1 Percent Slopes-----	53
Gb	Goessel Silty Clay, 1 To 2 Percent Slopes-----	53
INT	Aquolls-----	12
Ia	Irwin Silty Clay Loam, 1 To 3 Percent Slopes-----	63
Ib	Irwin Silty Clay Loam, 3 To 6 Percent Slopes-----	61
Ic	Irwin Silty Clay Loam, 2 To 6 Percent Slopes, Eroded-----	59
KAA	Kaski Loam, Occasionally Flooded-----	75
La	Lesho Loam, Occasionally Flooded-----	49
Lb	Lincoln Soils, Frequently Flooded-----	18
M-W	Miscellaneous Water-----	0
Ma	Milan Loam, 1 To 3 Percent Slopes-----	78
Mb	Milan Loam, 3 To 6 Percent Slopes-----	75
Mc	Milan Clay Loam, 2 To 6 Percent Slopes, Eroded-----	76
Na	Naron Fine Sandy Loam, 0 To 2 Percent Slopes-----	72
Oc	Wellsford Clay Loam, 1 To 3 Percent Slopes-----	7
Od	Wellsford-Rock Outcrop Complex, 3 To 10 Percent Slopes-----	4
Pa	Pits-----	0
Pb	Plevna Fine Sandy Loam, Frequently Flooded-----	30
Pc	Pratt Loamy Fine Sand, 1 To 5 Percent Slopes-----	40
Pd	Pratt-Tivoli Complex, 5 To 30 Percent Slopes-----	30
Ra	Renfrow Silty Clay Loam, 1 To 3 Percent Slopes-----	65
Rb	Renfrow Silty Clay Loam, 3 To 6 Percent Slopes-----	63
Rc	Renfrow-Wellsford Clay Loams, 1 To 4 Percent Slopes-----	44
Rd	Rosehill Silty Clay, 1 To 3 Percent Slopes-----	33
Sa	Shellabarger Sandy Loam, 1 To 3 Percent Slopes-----	70
Sb	Shellabarger Sandy Loam, 3 To 6 Percent Slopes-----	67
Sc	Shellabarger Sandy Loam, 3 To 6 Percent Slopes, Eroded-----	67

SOIL RATING FOR PLANT GROWTH, modified 1998
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The "Soil Rating for Plant Growth, modified 1998" (SRPG) is a relative rating of the capacity of a soil to produce a specific plant under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yields, the net returns from crops, land assessment values, and taxes and to perform risk analysis when land management decisions are made. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Map symbol	Soil name	Crop Index
Ta	Tabler Silty Clay Loam, 0 To 1 Percent Slopes-----	67
Tb	Tabler-Drummond Complex, 0 To 1 Percent Slopes-----	61
Ua	Urban Land-Canadian Complex, 0 To 3 Percent Slopes-----	17
Ub	Urban Land-Elandco Complex, 0 To 1 Percent Slopes-----	16
Uc	Urban Land-Farnum Complex, 0 To 3 Percent Slopes-----	23
Ud	Urban Land-Irwin Complex, 1 To 3 Percent Slopes-----	19
Ue	Urban Land-Tabler Complex, 0 To 1 Percent Slopes-----	20
Va	Vanoss Silt Loam, 0 To 1 Percent Slopes-----	78
Vb	Vanoss Silt Loam, 1 To 3 Percent Slopes-----	77
Vc	Vanoss Silt Loam, 3 To 6 Percent Slopes-----	74
Vd	Vanoss Silt Loam, 3 To 6 Percent Slopes, Eroded-----	74
Ve	Vernon Sandy Loam, 1 To 3 Percent Slopes-----	42
Vf	Vernon Sandy Loam, 3 To 6 Percent Slopes-----	40
W	Water-----	0
Wa	Waldeck Sandy Loam, Occasionally Flooded-----	37
Wb	Waurika Silt Loam, 0 To 1 Percent Slopes-----	66

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(Entries under "Erosion factors--T" apply to the entire profile. Entries under "K", "Kf", "Wind Erodibility Group" and "Wind Erodibility Index" apply only to the surface layer)

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
015LS:LADYSMITH-	90	N/A	2s	All areas are prime farmland	D	Clay Upland (pe30-36)	8	.37	.37	5	7	38
079CR:CRETE-----	100	2s-	2s	All areas are prime farmland	C	Clay Upland (pe25-34)	7	.37	.37	5	6	48
079CT:CRETE-----	100	2e-	2e	All areas are prime farmland	C	Clay Upland (pe25-34)	7	.37	.37	5	6	48
079DE:DETROIT---	100	1-	1	All areas are prime farmland	C	Loamy Terrace (pe25-34)	8	.37	.37	5	7	38
079DU:DRUMMOND--	75	N/A	6s	Not prime farmland	D	Saline Lowland (pe25-34)	5	.49	.49	2	4L	48
079FA:FARNUM----	100	1-	1	All areas are prime farmland	B	Sandy (pe25-34)	3	.20	.20	5	3	86
079FE:FARNUM----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe25-34)	7	.28	.28	5	6	48
079GD:GEARY-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe25-34)	7	.32	.32	5	6	48
079KA:KASKI-----	100	N/A	2w	All areas are prime farmland	B	Loamy Lowland (pe25-34)	7	.28	.28	5	6	48
079LA:LADYSMITH-	100	N/A	2s	All areas are prime farmland	D	Clay Upland (pe25-34)	8	.37	.37	5	7	38
079LB:LADYSMITH-	100	N/A	3e	All areas are prime farmland	D	Clay Upland (pe25-34)	8	.37	.37	5	7	38
079SM:SMOLAN----	90	2e-	2e	All areas are prime farmland	C	Loamy Upland (pe25-34)	8	.37	.37	5	7	38
095AD:ALBION----	100	N/A	6e	Not prime farmland	B	Sandy (pe24-32)	3	.20	.20	4	3	86
095LA:LINCOLN---	100	N/A	6w	Not prime farmland	A	Sandy Lowland (pe24-32)	2	.17	.17	5	2	134
095WA:WALDECK---	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	3	.20	.20	4	3	86
1011:ALBION-----	70	N/A	3e	All areas are prime farmland	B	Sandy (pe21-28)	3	.20	.24	4	3	86
1011:SHELLABARGE R-----	30	N/A	2e	All areas are prime farmland	B	Sandy (pe21-28)	3	.20	.20	5	3	86

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
1070:AVANS-----	100	N/A	1	All areas are prime farmland	B	Loamy Upland (pe21-28)	6	.37	.37	5	5	56
1071:AVANS-----	85	N/A	1	All areas are prime farmland	B	Loamy Upland (pe21-28)	6	.37	.37	5	5	56
1072:AVANS-----	85	N/A	2e	All areas are prime farmland	B	Loamy Upland (pe21-28)	6	.37	.37	5	5	56
191BA:BETHANY---	100	N/A	2c	All areas are prime farmland	C	Loamy Upland (pe25-34)	7	.37	.37	5	6	48
191BB:BETHANY---	100	N/A	2e	All areas are prime farmland	C	Loamy Upland (pe25-34)	7	.37	.37	5	6	48
191DR:DALE-----	50	N/A	1	All areas are prime farmland	B	Loamy Terrace (pe24-32)	6	.37	.37	5	5	56
191DR:REINACH---	50	N/A	1	All areas are prime farmland	B	Loamy Terrace (pe24-32)	6	.37	.37	5	5	56
191EA:ELANDCO---	100	N/A	1	All areas are prime farmland	B	Loamy Terrace (pe24-32)	7	.43	.43	5	6	48
191LO:LESHO-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe24-32)	5	.28	.28	4	4L	86
191LO:IMANO-----	85	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	5	.28	.28	4	4L	86
2204:JAMASH-----	50	N/A	4e	Not prime farmland	D	Shallow Prairie (pe24-32)	8	.37	.37	2	7	38
2204:PIEDMONT---	50	N/A	2e	Not prime farmland	D	Clay Upland (pe24-32)	8	.37	.37	3	7	38
2205:JAMASH-----	60	N/A	4e	Not prime farmland	D	Shallow Prairie (pe24-32)	8	.37	.37	2	7	38
2205:PIEDMONT---	40	N/A	3e	Not prime farmland	D	Clay Upland (pe24-32)	8	.37	.37	3	7	38
2207:JAMASH-----	80	N/A	6e	Not prime farmland	D	Shallow Prairie (pe24-32)	8	.37	.37	2	7	38
2381:KANZA-----	50	N/A	5w	Not prime farmland	D	Subirrigated (pe21-28)	3	.20	.20	5	3	86
2381:NINNESCAH--	50	N/A	5w	Not prime farmland	B	Subirrigated (pe21-28)	3	.20	.20	5	3	86
2587:IMANO-----	85	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	5	.28	.28	4	4L	86

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
2948:NALIM-----	80	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	6	.28	.28	5	5	56
3052:OST-----	55	N/A	2c	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
3052:CLARK-----	45	N/A	2c	All areas are prime farmland	B	Limy Upland (pe21-28)	5	.28	.28	5	4L	86
3170:BETHANY----	100	N/A	2c	All areas are prime farmland	C	Loamy Upland (pe25-34)	7	.37	.37	5	6	48
3170:PENALOSA---	100	1-	2c	All areas are prime farmland	C	Loamy Upland (pe21-28)	7	.37	.37	5	6	48
3171:BETHANY----	100	N/A	2e	All areas are prime farmland	C	Loamy Upland (pe25-34)	7	.37	.37	5	6	48
3171:PENALOSA---	100	1-	2c	All areas are prime farmland	C	Loamy Upland (pe21-28)	7	.37	.37	5	6	48
3535:SHELLABARGE R-----	55	N/A	2e	All areas are prime farmland	B	Sandy (pe21-28)	3	.20	.20	5	3	86
3535:NALIM-----	45	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	6	.28	.28	5	5	86
3639:TAVER-----	90	N/A	2s	All areas are prime farmland	D	Clay Upland (pe21-28)	7	.28	.28	5	6	48
3966:WILLOWBROOK	90	2e-	3e	Not prime farmland	B	Subirrigated (pe21-28)	3	.20	.20	4	3	86
4004:YAGGY-----	95	2e-	3e	Not prime farmland	C	Sandy Lowland (pe21-28)	3	.20	.20	3	3	86
AED:ARENTS, EARTHEN DAM----	100	N/A	8	Not prime farmland		Unspecified		---	---	-	---	---
Aa:ALBION-----	70	N/A	3e	Prime farmland if irrigated	B	Sandy (pe24-32)	3	.20	.20	4	3	86
Aa:SHELLABARGER-	30	N/A	2e	Prime farmland if irrigated	B	Sandy (pe24-32)	3	.20	.20	5	3	86
Ab:ALBION-----	50	N/A	6e	Not prime farmland	B	Sandy (pe24-32)	3	.20	.20	4	3	86
Ab:SHELLABARGER-	50	N/A	6e	Not prime farmland	B	Sandy (pe24-32)	3	.20	.20	5	3	86
BRR:BREWER-----	85	N/A	1	All areas are prime farmland	C	Loamy Terrace (pe25-34)	8	.37	.37	5	7	38

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Ba:BLANKET-----	100	N/A	1	All areas are prime farmland	C	Loamy Upland (pe24-32)	6	.37	.37	5	5	56
Bb:BLANKET-----	100	N/A	2e	All areas are prime farmland	C	Loamy Upland (pe24-32)	6	.37	.37	5	5	56
Ca:CANADIAN-----	100	N/A	1	All areas are prime farmland	B	Sandy Terrace (pe24-32)	3	.20	.20	5	3	86
Cb:CANADIAN-----	70	N/A	1	All areas are prime farmland	B	Sandy Terrace (pe24-32)	3	.20	.20	5	3	86
Cb:WALDECK-----	30	N/A	3w	All areas are prime farmland	C	Subirrigated (pe24-32)	3	.20	.20	4	3	86
Cc:CARWILE-----	100	N/A	2w	Not prime farmland	D	Sandy (pe24-32)	3	.24	.24	5	3	86
Cd:CLARK-----	75	N/A	3e	All areas are prime farmland	B	Limy Upland (pe24-32)	5	.28	.28	5	4L	86
Cd:OST-----	25	N/A	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.32	.32	5	6	48
Ce:CLIME-----	100	N/A	4e	Not prime farmland	C	Limy Upland (pe25-34)	4	.28	.28	3	4	86
Ea:ELANDCO-----	100	N/A	1	All areas are prime farmland	B	Loamy Terrace (pe24-32)	7	.43	.43	5	6	48
Eb:ELANDCO-----	100	N/A	2w	All areas are prime farmland	B	Loamy Lowland (pe24-32)	7	.43	.43	5	6	48
Ec:ELANDCO-----	100	N/A	5w	Not prime farmland	B	Loamy Lowland (pe24-32)	7	.43	.43	5	6	48
Fa:FARNUM-----	100	1-	1	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
Fb:FARNUM-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
Fc:FARNUM-----	100	1-	1	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	4	6	48
Ga:GOESSEL-----	100	N/A	2s	All areas are prime farmland	D	Clay Upland (pe25-34)	4	.28	.28	5	4	86
Gb:GOESSEL-----	100	N/A	3e	All areas are prime farmland	D	Clay Upland (pe25-34)	4	.28	.28	5	4	86
INT:AQUOLLS-----	100	N/A	5w	Not prime farmland	C	Unspecified		---	---	-	---	0

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Ia:IRWIN-----	100	N/A	3e	All areas are prime farmland	D	Clay Upland (pe25-34)	8	.32	.32	5	7	38
Ib:IRWIN-----	100	N/A	4e	All areas are prime farmland	D	Clay Upland (pe25-34)	8	.32	.32	5	7	38
Ic:IRWIN-----	100	N/A	4e	Not prime farmland	D	Clay Upland (pe25-34)	8	.32	.32	5	7	38
KAA:KASKI-----	100	N/A	2w	All areas are prime farmland	B	Loamy Lowland (pe25-34)	7	.28	.28	5	6	48
La:LESHO-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe24-32)	5	.28	.28	4	4L	86
Lb:LINCOLN-----	100	N/A	6w	Not prime farmland	A	Sandy Lowland (pe24-32)	3	.20	.20	5	3	86
M- W:MISCELLANEOUS WATER-----	100	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ma:MILAN-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
Mb:MILAN-----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
Mc:MILAN-----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.28	.28	5	6	48
Na:NARON-----	100	1-	1	All areas are prime farmland	B	Sandy (pe24-32)	3	.20	.20	5	3	86
Oc:WELLSFORD----	100	N/A	4e	Not prime farmland	D	Red Clay Prairie (pe24-32)	4	.32	.32	2	4	86
Od:WELLSFORD----	60	N/A	6e	Not prime farmland	D	Red Clay Prairie (pe24-32)	4	.32	.32	2	4	86
Od:ROCK OUTCROP-	40	N/A	8	Not prime farmland	D	Unspecified		---	---	-	---	---
Pa:PITS-----	100	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Pb:PLEVNA-----	100	N/A	5w	Not prime farmland	D	Subirrigated (pe24-32)	3	.20	.20	5	3	86
Pc:PRATT-----	100	3e-	3e	Not prime farmland	A	Sands (pe24-32)	2	.17	.17	5	2	134
Pd:PRATT-----	65	3e-	4e	Not prime farmland	A	Sands (pe24-32)	2	.17	.17	5	2	134
Pd:TIVOLI-----	35	N/A	7e	Not prime farmland	A	Sands (pe24-32)	2	.17	.17	5	2	134

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Ra:RENFROW-----	100	N/A	3e	All areas are prime farmland	D	Red Clay Prairie (pe24-32)	8	.43	.43	5	7	38
Rb:RENFROW-----	100	N/A	4e	All areas are prime farmland	D	Red Clay Prairie (pe24-32)	8	.43	.43	5	7	38
Rc:RENFROW-----	65	N/A	3e	Not prime farmland	D	Red Clay Prairie (pe24-32)	7	.43	.43	5	6	48
Rc:WELLSFORD----	35	N/A	4e	Not prime farmland	D	Red Clay Prairie (pe24-32)	4	.32	.32	2	4	86
Rd:ROSEHILL-----	100	N/A	3e	Not prime farmland	D	Clay Upland (pe25-34)	4	.28	.28	3	4	86
Sa:SHELLABARGER--	100	N/A	2e	All areas are prime farmland	B	Sandy (pe24-32)	3	.20	.20	5	3	86
Sb:SHELLABARGER--	100	N/A	3e	All areas are prime farmland	B	Sandy (pe24-32)	3	.20	.20	5	3	86
Sc:SHELLABARGER--	100	N/A	3e	All areas are prime farmland	B	Sandy (pe24-32)	3	.20	.20	5	3	86
Ta:TABLER-----	100	N/A	2s	All areas are prime farmland	D	Clay Upland (pe25-34)	8	.43	.43	5	7	38
Tb:TABLER-----	60	N/A	2s	Not prime farmland	D	Clay Upland (pe24-32)	7	.49	.49	5	6	48
Tb:DRUMMOND-----	40	N/A	6s	Not prime farmland	D	Saline Lowland (pe24-32)	5	.49	.49	2	4L	48
Ua:URBAN LAND---	70	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ua:CANADIAN-----	30	N/A	1	Not prime farmland	B	Unspecified	3	.20	.20	5	3	86
Ub:URBAN LAND---	75	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ub:ELANDCO-----	25	N/A	1	Not prime farmland	B	Unspecified	7	.43	.43	5	6	48
Uc:URBAN LAND---	70	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Uc:FARNUM-----	30	2e-	2e	Not prime farmland	B	Unspecified	7	.28	.28	5	6	48
Ud:URBAN LAND---	70	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ud:IRWIN-----	30	N/A	3e	Not prime farmland	D	Unspecified	8	.32	.32	5	7	38

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Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Ue:URBAN LAND---	70	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ue:TABLER-----	30	N/A	2s	Not prime farmland	D	Unspecified	8	.43	.43	5	7	38
Va:VANOSS-----	100	N/A	1	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.37	.37	5	6	48
Vb:VANOSS-----	100	N/A	2e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.37	.37	5	6	48
Vc:VANOSS-----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.37	.37	5	6	48
Vd:VANOSS-----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe24-32)	7	.37	.37	5	6	48
Ve:VERNON-----	100	N/A	3e	Not prime farmland	D	Red Clay Prairie (pe24-32)	3	.20	.20	3	3	86
Vf:VERNON-----	100	N/A	4e	Not prime farmland	D	Red Clay Prairie (pe24-32)	3	.20	.20	3	3	86
W:WATER-----	100	N/A	N/A			Unspecified		---	---	-	---	---
Wa:WALDECK-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe24-32)	3	.20	.20	4	3	86
Wb:WAURIKA-----	100	N/A	2w	All areas are prime farmland	D	Clay Upland (pe24-32)	7	.49	.49	5	6	48

RANGELAND PRODUCTIVITY
Sedgwick County, Kansas

Use and Explanation of Rangeland, Grazed Forest Land, Native Pastureland Interpretations

Information in this subsection can be used to plan the use and management of soils for rangeland, grazed forest land, and native pasture. Different kinds of soils vary in their capacity to produce native grasses and other plants suitable for grazing. Information in this subsection provides groupings of similar soils and estimates of potential forage production, which can be used to determine livestock stocking rates.

Rangeland. Range is land on which the native vegetation (climax or natural potential plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Rangeland receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed Forest Land. Includes land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significantly impairing other forest values.

Native Pasture. Includes land on which the native vegetation (climax or natural potential plant community) is forest but which is used and managed primarily for production of native plants for forage. Native pasture includes cut-over forest land and forest land cleared and now managed for native or naturalized forage plants.

Rangeland

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management based on the relationship between the soils and vegetation and water.

The Rangeland, Grazed Forest land, Native Pastureland Interpretations shows, for each soil that supports rangeland vegetation, the ecological site and the potential annual production of vegetation in favorable, normal, unfavorable years. An explanation of the column headings in this table follows.

An ecological site is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of a site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, average, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the National Range and Pasture Handbook, which is available in local offices of the Natural Resources Conservation Service. The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

RANGELAND PRODUCTIVITY--Continued
Sedgwick County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
015LS:				
Ladysmith-----	Clay Upland (pe30-36)	5,000	3,500	2,000
079CR:				
Crete-----	Clay Upland (pe25-34)	5,000	3,500	2,500
079CT:				
Crete-----	Clay Upland (pe25-34)	5,000	3,500	2,500
079DE:				
Detroit-----	Loamy Terrace (pe25-34)	6,000	4,500	3,000
079DU:				
Drummond-----	Saline Lowland (pe25-34)	7,000	5,800	5,000
079FA:				
Farnum-----	Sandy (pe25-34)	5,000	3,500	2,500
079FE:				
Farnum-----	Loamy Upland (pe25-34)	5,500	4,000	2,500
079GD:				
Geary-----	Loamy Upland (pe25-34)	6,000	4,000	3,000
079KA:				
Kaski-----	Loamy Lowland (pe25-34)	7,000	6,000	4,500
079LA:				
Ladysmith-----	Clay Upland (pe25-34)	5,000	3,500	2,000
079LB:				
Ladysmith-----	Clay Upland (pe25-34)	5,000	3,500	2,000
079SM:				
Smolan-----	Loamy Upland (pe25-34)	5,500	4,000	3,000
095AD:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
095LA:				
Lincoln-----	Sandy Lowland (pe24-32)	3,000	2,300	1,800
095WA:				
Waldeck-----	Subirrigated (pe21-28)	9,000	8,000	7,000
191BA:				
Bethany-----	Loamy Upland (pe25-34)	6,500	5,000	3,000
191BB:				
Bethany-----	Loamy Upland (pe25-34)	6,500	5,000	3,000
191DR:				
Dale-----	Loamy Terrace (pe24-32)	8,500	6,100	4,500
Reinach-----	Loamy Terrace (pe24-32)	8,500	6,100	4,500
191EA:				
Elandco-----	Loamy Terrace (pe24-32)	6,500	5,000	3,500
191LO:				
Lesho-----	Subirrigated (pe24-32)	9,000	8,000	7,000
1011:				
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
1070:				
Avans-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
1071:				
Avans-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
1072:				
Avans-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
2204:				
Jamash-----	Shallow Prairie (pe24-32)	3,200	2,400	1,700
Piedmont-----	Clay Upland (pe24-32)	5,000	3,500	2,500
2205:				
Jamash-----	Shallow Prairie (pe24-32)	3,200	2,400	1,700
Piedmont-----	Clay Upland (pe24-32)	5,000	3,500	2,500
2207:				
Jamash-----	Shallow Prairie (pe24-32)	3,200	2,400	1,700
2381:				
Kanza-----	Subirrigated (pe21-28)	9,500	8,500	7,500
Ninnescah-----	Subirrigated (pe21-28)	9,500	8,500	7,500
2587:				
Imano-----	Subirrigated (pe21-28)	9,500	8,500	7,500
2948:				
Nalim-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3052:				
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Clark-----	Limy Upland (pe21-28)	4,500	3,500	3,000
3170:				
Penalosa-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
3171:				
Penalosa-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
3535:				
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
Nalim-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3639:				
Taver-----	Clay Upland (pe21-28)	5,000	3,500	2,500
3966:				
Willowbrook-----	Subirrigated (pe21-28)	9,500	8,500	7,500
4004:				
Yaggy-----	Sandy Lowland (pe21-28)	6,000	4,750	3,500
Aa:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Ab:				

RANGELAND PRODUCTIVITY--Continued
Sedgwick County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
AED:				
Arents, Earthen Dam-----	---	---	---	---
Ba:				
Blanket-----	Loamy Upland (pe24-32)	6,500	5,000	3,000
Bb:				
Blanket-----	Loamy Upland (pe24-32)	6,500	5,000	3,000
BRR:				
Brewer-----	Loamy Terrace (pe25-34)	6,000	4,200	3,000
Ca:				
Canadian-----	Sandy Terrace (pe24-32)	8,500	6,100	4,500
Cb:				
Canadian-----	Sandy Terrace (pe24-32)	8,500	6,100	4,500
Waldeck-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Cc:				
Carwile-----	Sandy (pe24-32)	5,000	3,800	3,000
Cd:				
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ce:				
Clime-----	Limy Upland (pe25-34)	5,000	3,500	2,500
Ea:				
Elandco-----	Loamy Terrace (pe24-32)	6,500	5,000	3,500
Eb:				
Elandco-----	Loamy Lowland (pe24-32)	6,500	5,000	3,500
Ec:				
Elandco-----	Loamy Lowland (pe24-32)	6,500	5,000	3,500
Fa:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fb:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fc:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	3,000
Ga:				
Goessel-----	Clay Upland (pe25-34)	5,500	3,500	2,000
Gb:				
Goessel-----	Clay Upland (pe25-34)	5,500	3,500	2,000
Ia:				
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Ib:				
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Ic:				
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
INT:				
Aquolls-----	---	---	---	---
KAA:				
Kaski-----	Loamy Lowland (pe25-34)	7,000	6,000	4,500
La:				
Lesho-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Lb:				
Lincoln-----	Sandy Lowland (pe24-32)	3,000	2,300	1,800
M-W:				
Miscellaneous Water-----	---	---	---	---
Ma:				
Milan-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Mb:				
Milan-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Mc:				
Milan-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Na:				
Naron-----	Sandy (pe24-32)	4,500	3,000	2,000
Oc:				
Wellsford-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
Od:				
Wellsford-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
Rock Outcrop-----	---	---	---	---
Pa:				
Pits-----	---	---	---	---
Pb:				
Plevna-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Pc:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Pd:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Tivoli-----	Sands (pe24-32)	2,000	1,400	1,000
Ra:				
Renfrow-----	Red Clay Prairie (pe24-32)	4,000	2,800	2,000
Rb:				
Renfrow-----	Red Clay Prairie (pe24-32)	4,000	2,800	2,000
Rc:				
Renfrow-----	Red Clay Prairie (pe24-32)	4,000	2,800	2,000
Wellsford-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
Rd:				
Rosehill-----	Clay Upland (pe25-34)	5,500	3,500	2,000

RANGELAND PRODUCTIVITY--Continued
Sedgwick County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Sa: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sb: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sc: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Ta: Tabler-----	Clay Upland (pe25-34)	3,800	2,600	1,800
Tb: Tabler-----	Clay Upland (pe24-32)	3,800	2,600	1,800
Drummond-----	Saline Lowland (pe24-32)	7,000	5,800	5,000
Ua: Urban Land-----	---	---	---	---
Canadian-----	---	---	---	---
Ub: Urban Land-----	---	---	---	---
Elandco-----	---	---	---	---
Uc: Urban Land-----	---	---	---	---
Farnum-----	---	---	---	---
Ud: Urban Land-----	---	---	---	---
Irwin-----	---	---	---	---
Ue: Urban Land-----	---	---	---	---
Tabler-----	---	---	---	---
Va: Vanoss-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Vb: Vanoss-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Vc: Vanoss-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Vd: Vanoss-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Ve: Vernon-----	Red Clay Prairie (pe24-32)	1,750	1,350	900
Vf: Vernon-----	Red Clay Prairie (pe24-32)	1,750	1,350	900
W: Water-----	---	---	---	---
Wa: Waldeck-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Wb: Waurika-----	Clay Upland (pe24-32)	3,500	2,300	1,500

BUILDING SITE DEVELOPMENT
Sedgwick County, Kansas

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The following tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
079CR: Crete-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
079CT: Crete-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
079DE: Detroit-----	100	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00
079DU: Drummond-----	75	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.95	Very limited Shrink-swell	1.00
079FA: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
079FE: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
079GD: Geary-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
079KA: Kaski-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding	1.00	Very limited Flooding Shrink-swell	1.00 0.50
079LA: Ladysmith-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
079LB: Ladysmith-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
079SM: Smolan-----	90	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
095AD: Albion-----	100	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
095LA: Lincoln-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.03	Very limited Flooding	1.00
095WA: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
191BA: Bethany-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
191BB: Bethany-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
191DR: Dale-----	50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Reinach-----	50	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
191EA: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
191LO: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding Shrink-swell	1.00 0.50

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1011: Albion-----	70	Not limited		Not limited		Not limited	
Shellabarger-----	30	Not limited		Not limited		Not limited	
1070: Avans-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
1071: Avans-----	85	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
1072: Avans-----	85	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
2204: Jamash-----	50	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00
Piedmont-----	50	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 0.29	Very limited Shrink-swell	1.00
2205: Jamash-----	60	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00
Piedmont-----	40	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 0.29	Very limited Shrink-swell	1.00
2207: Jamash-----	80	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.12
2381: Kanza-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
Ninnescah-----	50	Very limited Flooding Depth to saturated zone	1.00 0.44	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.44
2587: Imano-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding Shrink-swell	1.00 0.50
2948: Nalim-----	80	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
3052: Ost-----	55	Not limited		Not limited		Not limited	
Clark-----	45	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
3170: Penalosa-----	100	Somewhat limited Shrink-swell	0.50	Very limited Shrink-swell	1.00	Somewhat limited Shrink-swell	0.50
3171: Penalosa-----	100	Somewhat limited Shrink-swell	0.50	Very limited Shrink-swell	1.00	Somewhat limited Shrink-swell	0.50
3535: Shellabarger-----	55	Not limited		Not limited		Not limited	
Nalim-----	45	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
3639: Taver-----	90	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3966: Willowbrook-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
4004: Yaggy-----	95	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
Aa: Albion-----	70	Not limited		Not limited		Not limited	
Ab: Shellabarger-----	30	Not limited		Not limited		Not limited	
Ab: Albion-----	50	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
Ab: Shellabarger-----	50	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Bb: Blanket-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
BRR: Brewer-----	85	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00
Ca: Canadian-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Cb: Canadian-----	70	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Cb: Waldeck-----	30	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
Cc: Carwile-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
Cd: Clark-----	75	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Ost-----	25	Not limited		Not limited		Not limited	
Ce: Clime-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to soft bedrock Shrink-swell	0.71 0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
Ea: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Eb: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Ec: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Fa: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Fb: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Fc: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ga: Goessel-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell	1.00
Gb: Goessel-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell	1.00
Ia: Irwin-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Ib: Irwin-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.12
Ic: Irwin-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.00
INT: Aquolls-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
KAA: Kaski-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding	1.00	Very limited Flooding Shrink-swell	1.00 0.50
La: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding Shrink-swell	1.00 0.50
Lb: Lincoln-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.03	Very limited Flooding	1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Mb: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
Mc: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.00
Na: Naron-----	100	Not limited		Not limited		Not limited	
Oc: Wellsford-----	100	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00
Od: Wellsford-----	60	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.86
Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pb: Plevna-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
Pc: Pratt-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Pd: Pratt-----	65	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
Tivoli-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Ra: Renfrow-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Rb: Renfrow-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.00
Rc: Renfrow-----	65	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Wellsford-----	35	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00 1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 1.00 1.00	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00 1.00
Rd: Rosehill-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to soft bedrock	1.00 0.42	Very limited Shrink-swell	1.00
Sa: Shellabarger-----	100	Not limited		Not limited		Not limited	
Sb: Shellabarger-----	100	Not limited		Not limited		Somewhat limited Slope	0.12
Sc: Shellabarger-----	100	Not limited		Not limited		Somewhat limited Slope	0.12
Ta: Tabler-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Tb: Tabler-----	60	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Drummond-----	40	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.61	Very limited Shrink-swell	1.00
Ua: Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Not limited		Not limited		Not limited	
Ub: Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Uc: Urban Land-----	70	Not rated		Not rated		Not rated	
Farnum-----	30	Not limited		Not limited		Not limited	
Ud: Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Ue: Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Va: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Vb: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Vc: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
Vd: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
Ve: Vernon-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Vf: Vernon-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.12
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
Wb: Waurika-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Depth to saturated zone Low strength Shrink-swell Frost action	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00
079CR: Crete-----	100	Very limited Low strength Shrink-swell	1.00 1.00	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
079CT: Crete-----	100	Very limited Low strength Shrink-swell Frost action	1.00 1.00 0.50	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
079DE: Detroit-----	100	Very limited Shrink-swell Flooding	1.00 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
079DU: Drummond-----	75	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone Too clayey Cutbanks cave	0.95 0.28 0.10	Very limited Salinity Droughty	1.00 0.06
079FA: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
079FE: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
079GD: Geary-----	100	Very limited Frost action Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
079KA: Kaski-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
079LA: Ladysmith-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
079LB: Ladysmith-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
079SM: Smolan-----	90	Very limited Shrink-swell	1.00	Somewhat limited Cutbanks cave Too clayey	0.10 0.04	Not limited	
095AD: Albion-----	100	Somewhat limited Slope	0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
095LA: Lincoln-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Flooding Depth to saturated zone	1.00 0.60 0.03	Somewhat limited Droughty Flooding	0.92 0.60
095WA: Waldeck-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
191BA: Bethany-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
191BB: Bethany-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191DR: Dale-----	50	Somewhat limited Shrink-swell Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Reinach-----	50	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
191EA: Elandco-----	100	Somewhat limited Shrink-swell Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
191LO: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
1011: Albion-----	70	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Shellabarger-----	30	Not limited		Very limited Cutbanks cave	1.00	Not limited	
1070: Avans-----	100	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
1071: Avans-----	85	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
1072: Avans-----	85	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
2204: Jamash-----	50	Very limited Depth to soft bedrock Low strength	1.00 1.00	Very limited Depth to soft bedrock Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to bedrock Droughty	1.00 0.86
Piedmont-----	50	Shrink-swell Very limited Shrink-swell Low strength	1.00 1.00 1.00	Somewhat limited Too clayey Depth to dense layer Depth to soft bedrock Cutbanks cave	0.88 0.50 0.29 0.10	Somewhat limited Depth to bedrock	0.29
2205: Jamash-----	60	Very limited Depth to soft bedrock Low strength	1.00 1.00	Very limited Depth to soft bedrock Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to bedrock Droughty	1.00 0.86
Piedmont-----	40	Shrink-swell Very limited Shrink-swell Low strength	1.00 1.00 1.00	Somewhat limited Too clayey Depth to dense layer Depth to soft bedrock Cutbanks cave	0.88 0.50 0.29 0.10	Somewhat limited Depth to bedrock	0.29
2207: Jamash-----	80	Very limited Depth to soft bedrock Low strength Shrink-swell	1.00 1.00 1.00	Very limited Depth to soft bedrock Depth to dense layer Cutbanks cave	1.00 0.50 0.10	Very limited Depth to bedrock Droughty	1.00 0.86

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
2381: Kanza-----	50	Very limited Flooding Depth to saturated zone	1.00 0.75	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone Droughty	1.00 0.75 0.00
Ninnescah-----	50	Very limited Flooding Depth to saturated zone	1.00 0.19	Very limited Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 1.00 0.60	Somewhat limited Flooding Depth to saturated zone	0.60 0.19
2587: Imano-----	85	Very limited Flooding Low strength Shrink-swell	1.00 1.00 0.50	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
2948: Nalim-----	80	Very limited Low strength Shrink-swell	1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	
3052: Ost-----	55	Somewhat limited Low strength	0.78	Somewhat limited Cutbanks cave	0.10	Not limited	
Clark-----	45	Somewhat limited Low strength Shrink-swell	0.78 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
3170: Penalosa-----	100	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
3171: Penalosa-----	100	Very limited Low strength Shrink-swell	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
3535: Shellabarger-----	55	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Nalim-----	45	Very limited Low strength Shrink-swell	1.00 0.50	Very limited Cutbanks cave	1.00	Not limited	
3639: Taver-----	90	Very limited Low strength Shrink-swell	1.00 1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
3966: Willowbrook-----	90	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
4004: Yaggy-----	95	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding Depth to dense layer	1.00 0.95 0.60 0.50	Somewhat limited Flooding Droughty	0.60 0.04
Aa: Albion-----	70	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Shellabarger-----	30	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ab: Albion-----	50	Somewhat limited Slope	0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
Shellabarger-----	50	Somewhat limited Slope	0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ba: Blanket-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
Bb: Blanket-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.03	Not limited	
BRR: Brewer-----	85	Very limited Shrink-swell Flooding	1.00 0.40	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
Ca: Canadian-----	100	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Cb: Canadian-----	70	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Waldeck-----	30	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Cc: Carwile-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to saturated zone	1.00
Cd: Clark-----	75	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Ost-----	25	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ce: Clime-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to soft bedrock Too clayey Cutbanks cave	0.71 0.28 0.10	Very limited Too clayey Depth to bedrock Droughty	1.00 0.71 0.00
Ea: Elandco-----	100	Somewhat limited Shrink-swell Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Eb: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
Ec: Elandco-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
Fa: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Fb: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Fc: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Ga: Goessel-----	100	Very limited Shrink-swell	1.00	Very limited Cutbanks cave Depth to saturated zone Too clayey	1.00 1.00 0.28	Very limited Too clayey	1.00
Gb: Goessel-----	100	Very limited Shrink-swell	1.00	Very limited Cutbanks cave Depth to saturated zone Too clayey	1.00 1.00 0.28	Very limited Too clayey	1.00
Ia: Irwin-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ib: Irwin-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Ic: Irwin-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
INT: Aquolls-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Cutbanks cave	1.00 1.00 0.10	Very limited Depth to saturated zone Ponding	1.00 1.00
KAA: Kaski-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
La: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Lb: Lincoln-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Flooding Depth to saturated zone	1.00 0.80 0.03	Very limited Flooding Droughty	1.00 0.80
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Mb: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Mc: Milan-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Na: Naron-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Oc: Wellsford-----	100	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to bedrock Droughty	1.00 1.00
Od: Wellsford-----	60	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to bedrock Droughty	1.00 1.00
Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	1.00 1.00
Pc: Pratt-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pd: Pratt-----	65	Somewhat limited Slope	0.04	Very limited Cutbanks cave Slope	1.00 0.04	Somewhat limited Slope	0.04
Tivoli-----	35	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope Droughty	1.00 0.92
Ra: Renfrow-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
Rb: Renfrow-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
Rc: Renfrow-----	65	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
Wellsford-----	35	Very limited Depth to soft bedrock Shrink-swell	1.00 1.00	Very limited Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to bedrock Droughty	1.00 1.00
Rd: Rosehill-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Depth to soft bedrock Cutbanks cave	0.50 0.42 0.10	Very limited Too clayey Depth to bedrock Droughty	1.00 0.42 0.05
Sa: Shellabarger-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Sb: Shellabarger-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Sc: Shellabarger-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Ta: Tabler-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
Tb: Tabler-----	60	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
Drummond-----	40	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone Too clayey Cutbanks cave	0.61 0.28 0.10	Not limited	
Ua: Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ub: Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Uc: Urban Land-----	70	Not rated		Not rated		Not rated	
Farnum-----	30	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ud: Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ue: Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
Va: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Vb: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Vc: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Vd: Vanoss-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Ve: Vernon-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Vf: Vernon-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Wb: Waurika-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00

CONSTRUCTION MATERIALS
Sedgwick County, Kansas

Construction Materials

The following tables give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated good, fair, or poor as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a probable or improbable source of sand and gravel. A rating of probable means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In these tables, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
015LS: Ladysmith-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079CR: Crete-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079CT: Crete-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079DE: Detroit-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079DU: Drummond-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079FA: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.08
079FE: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.08
079GD: Geary-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079KA: Kaski-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079LA: Ladysmith-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079LB: Ladysmith-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
079SM: Smolan-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
095AD: Albion-----	100	Poor Thickest layer Bottom layer	0.00 0.00	Fair Bottom layer Thickest layer	0.01 0.10
095LA: Lincoln-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.22 0.39
095WA: Waldeck-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.09
191BA: Bethany-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
191BB: Bethany-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
191DR: Dale-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Reinach-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
191EA: Elandco-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
191LO: Lesho-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.99
1011: Albion-----	70	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.67 0.90
Shellabarger-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.09 0.88
1070: Avans-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
1071: Avans-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
1072: Avans-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
2204: Jamash-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Piedmont-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
2205: Jamash-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Piedmont-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
2207: Jamash-----	80	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
2381: Kanza-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.22 0.90
Ninnescah-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.10 0.12

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
2587: Imano-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.66
2948: Nalim-----	80	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.98
3052: Ost-----	55	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Clark-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
3170: Penalosa-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
3171: Penalosa-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
3535: Shellabarger-----	55	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.09 0.88
Nalim-----	45	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.98
3639: Taver-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Thickest layer Bottom layer	0.00 0.00
3966: Willowbrook-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.61
4004: Yaggy-----	95	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.16
Aa: Albion-----	70	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.01
Shellabarger-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.03 0.08
Ab: Albion-----	50	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.01
Shellabarger-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.03 0.08
AED: Arents, Earthen Dam-	100	Not rated		Not rated	
Ba: Blanket-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Bb: Blanket-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
BRR: Brewer-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ca: Canadian-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.07
Cb: Canadian-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.07
Waldeck-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.06 0.15
Cc: Carwile-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Cd: Clark-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ost-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ce: Clime-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ea: Elandco-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Eb: Elandco-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ec: Elandco-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Fa: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Fb: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Fc: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.33
Ga: Goessel-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Gb: Goessel-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ia: Irwin-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ib: Irwin-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ic: Irwin-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
INT: Aguolls-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
KAA: Kaski-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
La: Lesho-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.12
Lb: Lincoln-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.01 0.22
M-W: Miscellaneous Water-	100	Not rated		Not rated	
Ma: Milan-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Mb: Milan-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Mc: Milan-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Na: Naron-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.01 0.08
Oc: Wellsford-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Od: Wellsford-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rock Outcrop-----	40	Not rated		Not rated	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Pa: Pits-----	100	Not rated		Not rated	
Pb: Plevna-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.09
Pc: Pratt-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.12 0.22
Pd: Pratt-----	65	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.12 0.22
Tivoli-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.12 0.50
Ra: Renfrow-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rb: Renfrow-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rc: Renfrow-----	65	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Wellsford-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Rd: Rosehill-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Sa: Shellabarger-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.03 0.08
Sb: Shellabarger-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.03 0.08
Sc: Shellabarger-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.03 0.08
Ta: Tabler-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Tb: Tabler-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Drummond-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ua: Urban Land-----	70	Not rated		Not rated	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Canadian-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.07
Ub: Urban Land-----	75	Not rated		Not rated	
Elandco-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Uc: Urban Land-----	70	Not rated		Not rated	
Farnum-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ud: Urban Land-----	70	Not rated		Not rated	
Irwin-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ue: Urban Land-----	70	Not rated		Not rated	
Tabler-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Va: Vanoss-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Vb: Vanoss-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Vc: Vanoss-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Vd: Vanoss-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ve: Vernon-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Vf: Vernon-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.06 0.15
Wb: Waurika-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Poor Too clayey Low content of organic matter No water erosion limitation	0.00 0.50 0.99	Poor Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.43	Poor Too Clayey Depth to saturated zone	0.00 0.00
079CR: Crete-----	100	Poor Too clayey Too acid Low content of organic matter Water erosion	0.00 0.84 0.88 0.90	Poor Low strength Shrink-swell	0.00 0.12	Poor Too Clayey	0.00
079CT: Crete-----	100	Poor Too clayey Too acid Low content of organic matter Water erosion	0.00 0.84 0.88 0.90	Poor Low strength Shrink-swell	0.00 0.12	Poor Too Clayey	0.00
079DE: Detroit-----	100	Poor Low content of organic matter Too clayey No water erosion limitation	0.00 0.00 0.99	Fair Shrink-swell	0.49	Poor Too Clayey	0.00
079DU: Drummond-----	75	Poor Low content of organic matter Too clayey Water erosion Salinity Droughty	0.00 0.00 0.68 0.88 0.96	Fair Shrink-swell	0.12	Poor Too Clayey Salinity	0.00 0.00
079FA: Farnum-----	100	Poor Low content of organic matter	0.00	Fair Shrink-swell	0.99	Good	
079FE: Farnum-----	100	Poor Low content of organic matter	0.00	Fair Shrink-swell	0.98	Good	
079GD: Geary-----	100	Poor Low content of organic matter Water erosion Too acid Too clayey	0.00 0.90 0.95 0.98	Fair Shrink-swell	0.87	Fair Too Clayey	0.49
079KA: Kaski-----	100	Good		Fair Shrink-swell	0.99	Good	
079LA: Ladysmith-----	100	Poor Too clayey No water erosion limitation	0.00 0.99	Fair Shrink-swell	0.31	Poor Too Clayey	0.00
079LB: Ladysmith-----	100	Poor Too clayey No water erosion limitation	0.00 0.99	Fair Shrink-swell	0.31	Poor Too Clayey	0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
079SM: Smolan-----	90	Poor Too clayey No water erosion limitation	0.00 0.99	Fair Shrink-swell	0.49	Poor Too Clayey	0.00
095AD: Albion-----	100	Poor Low content of organic matter Too acid	0.00 0.95	Good		Poor Rock fragments Slope Hard to reclaim	0.00 0.63 0.68
095LA: Lincoln-----	100	Poor Wind erosion Droughty Low content of organic matter Too sandy	0.00 0.04 0.08 0.22	Good		Fair Too sandy	0.22
095WA: Waldeck-----	100	Good		Good		Good	
191BA: Bethany-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.87	Poor Too Clayey	0.00
191BB: Bethany-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.87	Poor Too Clayey	0.00
191DR: Dale-----	50	Poor Low content of organic matter No water erosion limitation	0.00 0.99	Fair Shrink-swell	0.96	Good	
Reinach-----	50	Fair No water erosion limitation	0.99	Good		Good	
191EA: Elandco-----	100	Fair Water erosion	0.90	Fair Shrink-swell	0.87	Good	
191LO: Lesho-----	100	Poor Low content of organic matter Too clayey	0.00 0.95	Good		Fair Too Clayey	0.90
1011: Albion-----	70	Poor Low content of organic matter Too sandy Too acid	0.00 0.00 0.95	Good		Poor Too sandy Hard to reclaim Rock fragments	0.00 0.32 0.72
Shellabarger-----	30	Fair Low content of organic matter Too acid	0.12 0.84	Good		Good	
1070: Avans-----	100	Fair Too acid Low content of organic matter No water erosion limitation	0.46 0.56 0.99	Poor Low strength	0.00	Good	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1071: Avans-----	85	Fair Too acid Low content of organic matter No water erosion limitation	0.46 0.56 0.99	Poor Low strength	0.00	Good	
1072: Avans-----	85	Fair Too acid Low content of organic matter No water erosion limitation	0.46 0.56 0.99	Poor Low strength	0.00	Good	
2204: Jamash-----	50	Poor Droughty Depth to bedrock Too clayey Carbonate content No water erosion limitation	0.00 0.00 0.15 0.92 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.27	Poor Hard to reclaim Depth to bedrock Too Clayey	0.00 0.00 0.13
Piedmont-----	50	Poor Too clayey Depth to bedrock Low content of organic matter Water erosion Droughty Carbonate content	0.00 0.71 0.88 0.90 0.95 0.97	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.46	Poor Too Clayey Rock fragments Depth to bedrock Hard to reclaim	0.00 0.12 0.71
2205: Jamash-----	60	Poor Droughty Depth to bedrock Too clayey Carbonate content No water erosion limitation	0.00 0.00 0.15 0.92 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.27	Poor Hard to reclaim Depth to bedrock Too Clayey	0.00 0.00 0.13
Piedmont-----	40	Poor Too clayey Depth to bedrock Low content of organic matter Water erosion Droughty Carbonate content	0.00 0.71 0.88 0.90 0.95 0.97	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.46	Poor Too Clayey Rock fragments Depth to bedrock Hard to reclaim	0.00 0.12 0.71
2207: Jamash-----	80	Poor Droughty Depth to bedrock Too clayey Carbonate content No water erosion limitation	0.00 0.00 0.15 0.92 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.27	Poor Hard to reclaim Depth to bedrock Too Clayey	0.00 0.00 0.13
2381: Kanza-----	50	Fair Low content of organic matter Too sandy Too acid	0.12 0.22 0.95	Fair Depth to saturated zone	0.14	Fair Depth to saturated zone Too sandy	0.14 0.22
Ninnescah-----	50	Fair Low content of organic matter Too sandy	0.08 0.91	Fair Depth to saturated zone	0.53	Fair Depth to saturated zone Too sandy	0.53 0.91
2587: Imano-----	85	Fair Low content of organic matter	0.12	Good		Good	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
2948: Nalim-----	80	Fair Low content of organic matter Too acid	0.88 0.95	Fair Shrink-swell	0.94	Fair Hard to reclaim Hard to reclaim	0.01 0.32
3052: Ost-----	55	Fair Low content of organic matter Carbonate content	0.08 0.68	Good		Fair Carbonate content	0.80
Clark-----	45	Poor Carbonate content Low content of organic matter	0.00 0.02	Fair Low strength Shrink-swell	0.22 0.87	Good	
3170: Penalosa-----	100	Fair Low content of organic matter Too clayey Water erosion Too acid	0.10 0.20 0.90 0.95	Poor Low strength Shrink-swell	0.00 0.61	Fair Too Clayey	0.18
3171: Penalosa-----	100	Fair Low content of organic matter Too clayey Water erosion Too acid	0.10 0.20 0.90 0.95	Poor Low strength Shrink-swell	0.00 0.61	Fair Too Clayey	0.18
3535: Shellabarger-----	55	Fair Low content of organic matter Too acid	0.12 0.84	Good		Good	
Nalim-----	45	Fair Low content of organic matter Too acid	0.88 0.95	Fair Shrink-swell	0.94	Fair Hard to reclaim Hard to reclaim	0.01 0.32
3639: Taver-----	90	Poor Too clayey No water erosion limitation	0.00 0.99	Poor Low strength Shrink-swell	0.00 0.27	Poor Too Clayey	0.00
3966: Willowbrook-----	90	Poor Too sandy Low content of organic matter Too acid	0.00 0.00 0.99	Good		Poor Too sandy Rock fragments	0.00 0.50
4004: Yaggy-----	95	Poor Too sandy Low content of organic matter Droughty	0.00 0.00 0.93	Good		Poor Too sandy Hard to reclaim	0.00 0.74
Aa: Albion-----	70	Poor Low content of organic matter Too acid	0.00 0.95	Good		Poor Rock fragments Hard to reclaim	0.00 0.68
Shellabarger-----	30	Poor Low content of organic matter Too acid	0.00 0.84	Good		Good	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ab: Albion-----	50	Poor Low content of organic matter Too acid	0.00 0.95	Good		Poor Rock fragments Slope Hard to reclaim	0.00 0.63 0.68
Shellabarger-----	50	Poor Low content of organic matter Too acid	0.00 0.84	Good		Fair Slope	0.63
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.91	Poor Too Clayey	0.00
Bb: Blanket-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.91	Poor Too Clayey	0.00
BRR: Brewer-----	85	Poor Too clayey No water erosion limitation	0.00 0.99	Fair Shrink-swell	0.17	Poor Too Clayey	0.00
Ca: Canadian-----	100	Poor Low content of organic matter	0.00	Good		Good	
Cb: Canadian-----	70	Poor Low content of organic matter	0.00	Good		Good	
Waldeck-----	30	Poor Low content of organic matter	0.00	Good		Good	
Cc: Carwile-----	100	Poor Low content of organic matter Too acid No water erosion limitation	0.00 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.46	Poor Depth to saturated zone	0.00
Cd: Clark-----	75	Poor Low content of organic matter Carbonate content	0.00 0.68	Fair Shrink-swell	0.87	Fair Carbonate content	0.68
Ost-----	25	Poor Low content of organic matter Carbonate content	0.00 0.68	Good		Fair Carbonate content	0.68
Ce: Clime-----	100	Poor Too clayey Droughty Depth to bedrock	0.00 0.20 0.29	Poor Depth to bedrock Shrink-swell	0.00 0.87	Poor Too Clayey Depth to bedrock	0.00 0.29
Ea: Elandco-----	100	Fair Water erosion	0.90	Fair Shrink-swell	0.87	Good	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Eb: Elandco-----	100	Fair Water erosion	0.90	Fair Shrink-swell	0.87	Good	
Ec: Elandco-----	100	Fair Water erosion	0.90	Fair Shrink-swell	0.87	Good	
Fa: Farnum-----	100	Poor Low content of organic matter	0.00	Fair Shrink-swell	0.99	Good	
Fb: Farnum-----	100	Poor Low content of organic matter	0.00	Fair Shrink-swell	0.99	Good	
Fc: Farnum-----	100	Poor Low content of organic matter	0.00	Good		Good	
Ga: Goessel-----	100	Poor Too clayey Low content of organic matter	0.00 0.00	Fair Shrink-swell Depth to saturated zone	0.12 0.89	Poor Too Clayey Depth to saturated zone	0.00 0.89
Gb: Goessel-----	100	Poor Too clayey Low content of organic matter	0.00 0.00	Fair Shrink-swell Depth to saturated zone	0.12 0.89	Poor Too Clayey Depth to saturated zone	0.00 0.89
Ia: Irwin-----	100	Poor Too clayey	0.00	Fair Shrink-swell	0.16	Poor Too Clayey	0.00
Ib: Irwin-----	100	Poor Too clayey	0.00	Fair Shrink-swell	0.16	Poor Too Clayey	0.00
Ic: Irwin-----	100	Poor Too clayey	0.00	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
INT: Aquolls-----	100	Poor Low content of organic matter	0.00	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone	0.00
KAA: Kaski-----	100	Good		Fair Shrink-swell	0.99	Good	
La: Lesho-----	100	Poor Low content of organic matter	0.00	Good		Good	
Lb: Lincoln-----	100	Poor Low content of organic matter Droughty Too sandy	0.00 0.10 0.22	Good		Fair Too sandy	0.22
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Poor Low content of organic matter Too acid	0.00 0.95	Fair Shrink-swell	0.89	Good	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Mb: Milan-----	100	Poor Low content of organic matter Too acid	0.00 0.95	Fair Shrink-swell	0.89	Good	
Mc: Milan-----	100	Poor Low content of organic matter Too acid	0.00 0.95	Fair Shrink-swell	0.87	Good	
Na: Naron-----	100	Poor Low content of organic matter	0.00	Good		Good	
Oc: Wellsford-----	100	Poor Droughty Low content of organic matter Depth to bedrock Too clayey	0.00 0.00 0.00 0.00	Poor Depth to bedrock Shrink-swell	0.00 0.12	Poor Depth to bedrock Too Clayey	0.00 0.00
Od: Wellsford-----	60	Poor Droughty Low content of organic matter Depth to bedrock Too clayey	0.00 0.00 0.00 0.00	Poor Depth to bedrock Shrink-swell	0.00 0.12	Poor Depth to bedrock Too Clayey	0.00 0.00
Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Poor Low content of organic matter	0.00	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone	0.00
Pc: Pratt-----	100	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.78	Good		Fair Too sandy	0.78
Pd: Pratt-----	65	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.78	Good		Fair Too sandy Slope	0.78 0.96
Tivoli-----	35	Poor Too sandy Wind erosion Low content of organic matter Droughty	0.00 0.00 0.00 0.04	Fair Slope	0.82	Poor Too sandy Slope	0.00 0.00
Ra: Renfrow-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.16	Poor Too Clayey	0.00
Rb: Renfrow-----	100	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.16	Poor Too Clayey	0.00

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rc: Renfrow-----	65	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.16	Poor Too Clayey	0.00
Wellsford-----	35	Poor Droughty Low content of organic matter Depth to bedrock Too clayey	0.00 0.00 0.00 0.00	Poor Depth to bedrock Shrink-swell	0.00 0.12	Poor Depth to bedrock Too Clayey	0.00 0.00
Rd: Rosehill-----	100	Poor Too clayey Low content of organic matter Droughty Depth to bedrock	0.00 0.00 0.12 0.58	Poor Depth to bedrock Shrink-swell	0.00 0.15	Poor Too Clayey Depth to bedrock	0.00 0.58
Sa: Shellabarger-----	100	Poor Low content of organic matter Too acid	0.00 0.84	Good		Good	
Sb: Shellabarger-----	100	Poor Low content of organic matter Too acid	0.00 0.84	Good		Good	
Sc: Shellabarger-----	100	Poor Low content of organic matter Too acid	0.00 0.84	Good		Good	
Ta: Tabler-----	100	Poor Too clayey Low content of organic matter Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
Tb: Tabler-----	60	Poor Too clayey Low content of organic matter Water erosion	0.00 0.00 0.68	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
Drummond-----	40	Poor Low content of organic matter Too clayey Water erosion	0.00 0.00 0.37	Fair Shrink-swell	0.56	Poor Too Clayey Salinity	0.00 0.88
Ua: Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Poor Low content of organic matter	0.00	Good		Good	
Ub: Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Fair Water erosion	0.90	Fair Shrink-swell	0.87	Good	
Uc: Urban Land-----	70	Not rated		Not rated		Not rated	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Farnum-----	30	Poor Low content of organic matter	0.00	Good		Good	
Ud: Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Poor Too clayey	0.00	Fair Shrink-swell	0.16	Poor Too Clayey	0.00
Ue: Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Poor Too clayey Low content of organic matter Water erosion	0.00 0.00 0.90	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
Va: Vanoss-----	100	Poor Low content of organic matter Too acid Too clayey No water erosion limitation	0.00 0.97 0.98 0.99	Fair Shrink-swell	0.90	Fair Too Clayey	0.49
Vb: Vanoss-----	100	Poor Low content of organic matter Too acid Too clayey No water erosion limitation	0.00 0.97 0.98 0.99	Fair Shrink-swell	0.90	Fair Too Clayey	0.49
Vc: Vanoss-----	100	Poor Low content of organic matter Too acid Too clayey No water erosion limitation	0.00 0.97 0.98 0.99	Fair Shrink-swell	0.90	Fair Too Clayey	0.49
Vd: Vanoss-----	100	Poor Low content of organic matter Too acid Too clayey No water erosion limitation	0.00 0.97 0.98 0.99	Fair Shrink-swell	0.87	Fair Too Clayey	0.49
Ve: Vernon-----	100	Poor Too clayey Low content of organic matter Droughty No water erosion limitation	0.00 0.00 0.94 0.99	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
Vf: Vernon-----	100	Poor Too clayey Low content of organic matter Droughty No water erosion limitation	0.00 0.00 0.94 0.99	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
W: Water-----	100	Not rated		Not rated		Not rated	

CONSTRUCTION MATERIALS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Wa: Waldeck-----	100	Poor Low content of organic matter	0.00	Good		Good	
Wb: Waurika-----	100	Poor Too clayey	0.00	Poor Depth to saturated zone	0.00	Poor Too Clayey	0.00
		Low content of organic matter	0.00	Shrink-swell	0.34	Depth to saturated zone	0.00
		Water erosion	0.68				

RECREATIONAL INTERPRETATIONS
Sedgwick County, Kansas

Recreation

The soils of the survey area are rated in the following tables according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Depth to saturated zone Restricted permeability	1.00 0.45	Very limited Depth to saturated zone Restricted permeability	1.00 0.45	Very limited Depth to saturated zone Restricted permeability	1.00 0.45
079CR: Crete-----	100	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39
079CT: Crete-----	100	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability Slope	0.39 0.00
079DE: Detroit-----	100	Very limited Flooding Restricted permeability	1.00 0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39
079DU: Drummond-----	75	Very limited Salinity Restricted permeability	1.00 0.45	Very limited Salinity Restricted permeability	1.00 0.45	Very limited Salinity Restricted permeability	1.00 0.45
079FA: Farnum-----	100	Not limited		Not limited		Not limited	
079FE: Farnum-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
079GD: Geary-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
079KA: Kaski-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
079LA: Ladysmith-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
079LB: Ladysmith-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.00
079SM: Smolan-----	90	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability Slope	0.39 0.00
095AD: Albion-----	100	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Gravel content	1.00 0.06
095LA: Lincoln-----	100	Very limited Flooding Too sandy	1.00 0.79	Somewhat limited Too sandy	0.79	Somewhat limited Too sandy Flooding	0.79 0.60
095WA: Waldeck-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
191BA: Bethany-----	100	Not limited		Not limited		Not limited	
191BB: Bethany-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
191DR: Dale-----	50	Very limited Flooding	1.00	Not limited		Not limited	
Reinach-----	50	Very limited Flooding	1.00	Not limited		Not limited	
191EA: Elandco-----	100	Very limited Flooding	1.00	Not limited		Not limited	
191LO: Lesho-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
1011: Albion-----	70	Somewhat limited Too sandy	0.02	Somewhat limited Too sandy	0.02	Somewhat limited Slope Gravel content	0.13 0.06

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Shellabarger-----	30	Not limited		Not limited		Too sandy Somewhat limited Slope	0.02 0.00
1070: Avans-----	100	Not limited		Not limited		Not limited	
1071: Avans-----	85	Not limited		Not limited		Somewhat limited Slope	0.00
1072: Avans-----	85	Not limited		Not limited		Somewhat limited Slope	0.87
2204: Jamash-----	50	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability	1.00 0.45
Piedmont-----	50	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
2205: Jamash-----	60	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability Slope	1.00 0.45 0.00
Piedmont-----	40	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.00
2207: Jamash-----	80	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Slope Restricted permeability	1.00 0.87 0.45
2381: Kanza-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Flooding	0.75 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
Ninnescah-----	50	Very limited Flooding Depth to saturated zone	1.00 0.44	Somewhat limited Depth to saturated zone	0.19	Somewhat limited Flooding Depth to saturated zone	0.60 0.44
2587: Imano-----	85	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
2948: Nalim-----	80	Not limited		Not limited		Not limited	
3052: Ost-----	55	Not limited		Not limited		Somewhat limited Slope	0.00
Clark-----	45	Not limited		Not limited		Somewhat limited Slope	0.00
3170: Penalosa-----	100	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39
3171: Penalosa-----	100	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39
3535: Shellabarger-----	55	Not limited		Not limited		Somewhat limited Slope	0.00
Nalim-----	45	Not limited		Not limited		Somewhat limited Slope	0.00
3639: Taver-----	90	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
3966: Willowbrook-----	90	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
4004: Yaggy-----	95	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Aa: Albion-----	70	Not limited		Not limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Shellabarger-----	30	Not limited		Not limited		Slope Gravel content Somewhat limited Slope	0.13 0.06 0.13
Ab: Albion-----	50	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Gravel content	1.00 0.06
Shellabarger-----	50	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Not limited		Not limited		Not limited	
Bb: Blanket-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
BRR: Brewer-----	85	Very limited Flooding Restricted permeability	1.00 0.39	Somewhat limited Restricted permeability	0.39	Somewhat limited Restricted permeability	0.39
Ca: Canadian-----	100	Very limited Flooding	1.00	Not limited		Not limited	
Cb: Canadian-----	70	Very limited Flooding	1.00	Not limited		Not limited	
Waldeck-----	30	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Cc: Carwile-----	100	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94
Cd: Clark-----	75	Not limited		Not limited		Somewhat limited Slope	0.13
Ost-----	25	Not limited		Not limited		Somewhat limited Slope	0.13
Ce: Clime-----	100	Somewhat limited Too clayey Restricted permeability	0.50 0.39	Somewhat limited Too clayey Restricted permeability	0.50 0.39	Somewhat limited Slope Depth to bedrock Too clayey Restricted permeability	0.87 0.71 0.50 0.39
Ea: Elandco-----	100	Very limited Flooding	1.00	Not limited		Not limited	
Eb: Elandco-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Ec: Elandco-----	100	Very limited Flooding	1.00	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
Fa: Farnum-----	100	Not limited		Not limited		Not limited	
Fb: Farnum-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Fc: Farnum-----	100	Not limited		Not limited		Not limited	
Ga: Goessel-----	100	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability	0.50 0.45
Gb: Goessel-----	100	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability Slope	0.50 0.45 0.00
Ia: Irwin-----	100	Somewhat limited		Somewhat limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ib: Irwin-----	100	Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability Slope	0.45
		Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Slope	0.87
Ic: Irwin-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Restricted permeability	0.45
		Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Slope	0.50
INT: Aquolls-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Restricted permeability	0.45
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone Ponding	1.00
KAA: Kaski-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
La: Lesho-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Lb: Lincoln-----	100	Very limited Flooding	1.00	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Mb: Milan-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
Mc: Milan-----	100	Not limited		Not limited		Somewhat limited Slope	0.50
Na: Naron-----	100	Not limited		Not limited		Not limited	
Oc: Wellsford-----	100	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability Slope	0.45
Od: Wellsford-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Slope	1.00
Rock Outcrop-----	40	Not rated		Not rated		Restricted permeability	0.45
		Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Very limited Flooding	1.00	Very limited Depth to saturated zone	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Flooding	0.40	Depth to saturated zone	1.00
Pc: Pratt-----	100	Somewhat limited Too sandy	0.12	Somewhat limited Too sandy	0.12	Somewhat limited Slope Too sandy	0.50
Pd: Pratt-----	65	Somewhat limited Too sandy	0.12	Somewhat limited Too sandy	0.12	Very limited Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.12
Tivoli-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ra: Renfrow-----	100	Too sandy	0.12	Too sandy	0.12	Too sandy	0.12
		Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.00
Rb: Renfrow-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Slope	0.50
						Restricted permeability	0.45
Rc: Renfrow-----	65	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.13
		Wellsford-----	35	Very limited Depth to bedrock Restricted permeability	1.00 0.45	Very limited Depth to bedrock Restricted permeability Slope	1.00 0.45 0.13
Rd: Rosehill-----	100	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability	0.50 0.45	Somewhat limited Too clayey Restricted permeability Slope	0.50 0.45 0.00
		Sa: Shellabarger-----	100	Not limited		Somewhat limited Slope	0.00
Sb: Shellabarger-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
		Sc: Shellabarger-----	100	Not limited		Somewhat limited Slope	0.87
Ta: Tabler-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
		Tb: Tabler-----	60	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
Drummond-----	40	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
		Ua: Urban Land-----	70	Not rated		Not rated	
Canadian-----	30	Not limited		Not limited		Not limited	
		Ub: Urban Land-----	75	Not rated		Not rated	
Elandco-----	25	Not limited		Not limited		Not limited	
		Uc: Urban Land-----	70	Not rated		Not rated	
Farnum-----	30	Not limited		Not limited		Somewhat limited Slope	0.00
		Ud: Urban Land-----	70	Not rated		Not rated	
Irwin-----	30	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.00
		Ue: Urban Land-----	70	Not rated		Not rated	
Tabler-----	30	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
		Va: Vanoss-----	100	Not limited		Not limited	

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Vb: Vanoss-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Vc: Vanoss-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
Vd: Vanoss-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
Ve: Vernon-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability Slope	0.45 0.00
Vf: Vernon-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Slope Restricted permeability	0.87 0.45
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Wb: Waurika-----	100	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Very limited Depth to saturated zone Restricted permeability	1.00 1.00	Very limited Depth to saturated zone Restricted permeability	1.00 1.00

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
079CR: Crete-----	100	Not limited		Not limited	
079CT: Crete-----	100	Not limited		Not limited	
079DE: Detroit-----	100	Not limited		Not limited	
079DU: Drummond-----	75	Not limited		Very limited Salinity Droughty	1.00 0.06
079FA: Farnum-----	100	Not limited		Not limited	
079FE: Farnum-----	100	Not limited		Not limited	
079GD: Geary-----	100	Not limited		Not limited	
079KA: Kaski-----	100	Not limited		Somewhat limited Flooding	0.60
079LA: Ladysmith-----	100	Not limited		Not limited	
079LB: Ladysmith-----	100	Not limited		Not limited	
079SM: Smolan-----	90	Not limited		Not limited	
095AD: Albion-----	100	Not limited		Somewhat limited Slope	0.37
095LA: Lincoln-----	100	Somewhat limited Too sandy	0.79	Somewhat limited Droughty Flooding	0.92 0.60
095WA: Waldeck-----	100	Not limited		Somewhat limited Flooding	0.60
191BA: Bethany-----	100	Not limited		Not limited	
191BB: Bethany-----	100	Not limited		Not limited	
191DR: Dale-----	50	Not limited		Not limited	
191EA: Reinach-----	50	Not limited		Not limited	
191LO: Lesho-----	100	Not limited		Not limited	
1011: Albion-----	70	Somewhat limited Too sandy	0.02	Somewhat limited Flooding	0.60
Shellabarger-----	30	Not limited		Not limited	
1070: Avans-----	100	Not limited		Not limited	
1071: Avans-----	85	Not limited		Not limited	
1072: Avans-----	85	Not limited		Not limited	
2204: Jamash-----	50	Not limited		Very limited Depth to bedrock Droughty	1.00 0.86
Piedmont-----	50	Not limited		Somewhat limited Depth to bedrock	0.29
2205: Jamash-----	60	Not limited		Very limited Depth to bedrock Droughty	1.00 0.86
Piedmont-----	40	Not limited		Somewhat limited Depth to bedrock	0.29
2207: Jamash-----	80	Not limited		Very limited Depth to bedrock Droughty	1.00 0.86
2381: Kanza-----	50	Somewhat limited Depth to saturated zone	0.44	Very limited Flooding	1.00

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
		Flooding	0.40	Depth to saturated zone	0.75
Ninnescah-----	50	Not limited		Droughty	0.00
				Somewhat limited	
2587: Imano-----	85	Not limited		Flooding	0.60
				Depth to saturated zone	0.19
2948: Nalim-----	80	Not limited		Somewhat limited	
3052: Ost-----	55	Not limited		Flooding	0.60
Clark-----	45	Not limited		Depth to saturated zone	0.19
3170: Penalosa-----	100	Not limited			
3171: Penalosa-----	100	Not limited		Somewhat limited	
3535: Shellabarger-----	55	Not limited		Flooding	0.60
Nalim-----	45	Not limited			
3639: Taver-----	90	Not limited		Not limited	
3966: Willowbrook-----	90	Not limited		Not limited	
4004: Yaggy-----	95	Not limited		Somewhat limited	
				Flooding	0.60
Aa: Albion-----	70	Not limited		Not limited	
Shellabarger-----	30	Not limited		Droughty	0.04
Ab: Albion-----	50	Not limited		Somewhat limited	
Shellabarger-----	50	Not limited		Slope	0.37
				Somewhat limited	
				Slope	0.37
AED: Arents, Earthen Dam-----	100	Not rated		Not rated	
Ba: Blanket-----	100	Not limited		Not limited	
Bb: Blanket-----	100	Not limited		Not limited	
BRR: Brewer-----	85	Not limited		Not limited	
Ca: Canadian-----	100	Not limited		Not limited	
Cb: Canadian-----	70	Not limited		Not limited	
Waldeck-----	30	Not limited		Somewhat limited	
				Flooding	0.60
Cc: Carwile-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Cd: Clark-----	75	Not limited		Not limited	
Ost-----	25	Not limited		Not limited	
Ce: Clime-----	100	Somewhat limited Too clayey	0.50	Very limited Too clayey	1.00
				Depth to bedrock	0.71
				Droughty	0.00
Ea: Elandco-----	100	Not limited		Not limited	
Eb: Elandco-----	100	Not limited		Somewhat limited	
				Flooding	0.60
Ec: Elandco-----	100	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
Fa: Farnum-----	100	Not limited		Not limited	
Fb: Farnum-----	100	Not limited		Not limited	
Fc: Farnum-----	100	Not limited		Not limited	

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ga: Goessel-----	100	Somewhat limited Too clayey	0.50	Very limited Too clayey	1.00
Gb: Goessel-----	100	Somewhat limited Too clayey	0.50	Very limited Too clayey	1.00
Ia: Irwin-----	100	Not limited		Not limited	
Ib: Irwin-----	100	Not limited		Not limited	
Ic: Irwin-----	100	Not limited		Not limited	
INT: Aquolls-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
KAA: Kaski-----	100	Not limited		Somewhat limited Flooding	0.60
La: Lesho-----	100	Not limited		Somewhat limited Flooding	0.60
Lb: Lincoln-----	100	Somewhat limited Flooding	0.40	Very limited Flooding Droughty	1.00 0.80
M-W: Miscellaneous Water-	100	Not rated		Not rated	
Ma: Milan-----	100	Not limited		Not limited	
Mb: Milan-----	100	Not limited		Not limited	
Mc: Milan-----	100	Not limited		Not limited	
Na: Naron-----	100	Not limited		Not limited	
Oc: Wellsford-----	100	Not limited		Very limited Depth to bedrock Droughty	1.00 1.00
Od: Wellsford-----	60	Not limited		Very limited Depth to bedrock Droughty	1.00 1.00
Rock Outcrop-----	40	Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated	
Pb: Plevna-----	100	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
Pc: Pratt-----	100	Somewhat limited Too sandy	0.12	Not limited	
Pd: Pratt-----	65	Somewhat limited Too sandy	0.12	Somewhat limited Slope	0.04
Tivoli-----	35	Somewhat limited Slope Too sandy	0.18 0.12	Very limited Slope Droughty	1.00 0.92
Ra: Renfrow-----	100	Not limited		Not limited	
Rb: Renfrow-----	100	Not limited		Not limited	
Rc: Renfrow-----	65	Not limited		Not limited	
Wellsford-----	35	Not limited		Very limited Depth to bedrock Droughty	1.00 1.00
Rd: Rosehill-----	100	Somewhat limited Too clayey	0.50	Very limited Too clayey	1.00

RECREATIONAL INTERPRETATIONS--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
				Depth to bedrock Droughty	0.42 0.05
Sa: Shellabarger-----	100	Not limited		Not limited	
Sb: Shellabarger-----	100	Not limited		Not limited	
Sc: Shellabarger-----	100	Not limited		Not limited	
Ta: Tabler-----	100	Not limited		Not limited	
Tb: Tabler-----	60	Not limited		Not limited	
Drummond-----	40	Not limited		Not limited	
Ua: Urban Land-----	70	Not rated		Not rated	
Canadian-----	30	Not limited		Not limited	
Ub: Urban Land-----	75	Not rated		Not rated	
Elandco-----	25	Not limited		Not limited	
Uc: Urban Land-----	70	Not rated		Not rated	
Farnum-----	30	Not limited		Not limited	
Ud: Urban Land-----	70	Not rated		Not rated	
Irwin-----	30	Not limited		Not limited	
Ue: Urban Land-----	70	Not rated		Not rated	
Tabler-----	30	Not limited		Not limited	
Va: Vanoss-----	100	Not limited		Not limited	
Vb: Vanoss-----	100	Not limited		Not limited	
Vc: Vanoss-----	100	Not limited		Not limited	
Vd: Vanoss-----	100	Not limited		Not limited	
Ve: Vernon-----	100	Not limited		Not limited	
Vf: Vernon-----	100	Not limited		Not limited	
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Not limited		Somewhat limited Flooding	0.60
Wb: Waurika-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

WILDLIFE INTERPRETATIONS
Sedgwick County, Kansas

Use and Explanation of Wildlife Interpretations

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the development of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, water, and living space. If any one of these elements is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area. If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

In the Wildlife Interpretations table, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

Suitability Ratings

The potential of the soil is rated good, fair, poor, or very poor.

Good - means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose.

Fair - means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results.

Poor - means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and requires intensive effort.

Very Poor - means that limitations are very severe for the designated element or kind of wildlife habitat. Habitat is difficult to create, improve, or maintain in most places, and management is difficult and requires intensive effort.

Description of Wildlife Habitat Elements

Openland habitat consists of croplands, pastures, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kind of wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, red fox, and coyote.

Woodland habitat consists of hardwood or conifers, or a mixture of these and associated grasses, legumes and wild herbaceous plants. Examples of wildlife attracted to this habitat are wild turkey, thrushes, woodpeckers, owl, tree squirrels, raccoon, and deer.

Wetland habitat consists of water-tolerant plants in open, marshy or swampy, shallow water areas. Examples of wildlife attracted to this habitat are ducks, geese, herons, bitterns, rails, kingfishers, shorebirds, muskrat, mink, and beaver.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are fragrant sumac, chokecherry, American plum, sand plum, and gorden currant.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, saltgrass, cordgrass, rushes, sedges, and cattails.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, red fox and coyote.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include antelope, deer, cottontail rabbit, prairie chicken, meadowlark, quail, and pheasant.

WILDLIFE INTERPRETATIONS
Sedgwick County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
015LS: LADYSMITH-----	Fair	Good	Good	---	---	Good	Poor	Fair	Good	---	Poor	Good
079CR: CRETE-----	Good	Good	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor	Good
079CT: CRETE-----	Good	Good	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor	Good
079DE: DETROIT-----	Good	Good	Good	---	---	Good	Good	Good	Good	---	Good	Good
079DU: DRUMMOND-----	Poor	Fair	Fair	---	Poor	Poor	Fair	Fair	Fair	---	Fair	Poor
079FA: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
079FE: FARNUM-----	Fair	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
079GD: GEARY-----	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor	Good
079KA: KASKI-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
079LA: LADYSMITH-----	Fair	Good	Good	---	---	Good	Poor	Fair	Good	---	Poor	Good
079LB: LADYSMITH-----	Fair	Good	Good	---	---	Good	Poor	Fair	Good	---	Poor	Good
079SM: SMOLAN-----	Good	Good	Fair	---	---	Fair	Poor	Fair	Good	---	Poor	Fair
095AD: ALBION-----	Poor	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
095LA: LINCOLN-----	Fair	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
095WA: WALDECK-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
191BA: BETHANY-----	Good	Good	Fair	---	Good	Good	Poor	Very poor	Good	---	Very poor	Fair
191BB: BETHANY-----	Good	Good	Fair	---	Good	Good	Poor	Very poor	Good	---	Very poor	Fair
191DR: DALE-----	Good	Good	Fair	---	---	Good	Poor	Very poor	Good	---	Very poor	Fair
REINACH-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
191EA: ELANDCO-----	Good	Good	Fair	---	---	Good	Poor	Very poor	Good	---	Very poor	Fair
191LO: LESHO-----	Fair	Fair	Fair	---	---	Fair	Fair	Fair	Fair	---	Fair	Fair
1011: ALBION-----	Fair	Good	Fair	Poor	Poor	Fair	Very poor	Very poor	Fair	Poor	Very poor	Fair
SHELLABARGER----	Good	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor	Good
1070: AVANS-----	Good	Good	Good	Good	Good	Fair	Poor	Very poor	Good	Good	Very poor	Fair

WILDLIFE INTERPRETATIONS--Continued
Sedgwick County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
1071: AVANS-----	Good	Good	Good	Good	Good	Fair	Poor	Very poor	Good	Good	Very poor	Fair
1072: AVANS-----	Good	Good	Good	Good	Good	Fair	Poor	Very poor	Good	Good	Very poor	Fair
2204: JAMASH-----	Fair	Good	Fair	Poor	Fair	Poor	Poor	Very poor	Fair	Poor	Very poor	Poor
PIEDMONT-----	Fair	Good	Fair	Good	Good	Poor	Poor	Very poor	Fair	Good	Very poor	Poor
2205: JAMASH-----	Fair	Good	Fair	Poor	Fair	Poor	Poor	Very poor	Fair	Poor	Very poor	Poor
PIEDMONT-----	Fair	Good	Fair	Good	Good	Poor	Poor	Very poor	Fair	Good	Very poor	Poor
2207: JAMASH-----	Fair	Good	Fair	Poor	Fair	Poor	Poor	Very poor	Fair	Poor	Very poor	Poor
2381: KANZA-----	Very poor	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Good	Good	Fair
NINNESCAH-----	Poor	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good	Fair
2587: IMANO-----	Fair	Fair	Good	Fair	Fair	Good	Fair	Fair	Fair	Fair	Fair	Good
2948: NALIM-----	Good	Good	Good	Good	Good	Fair	Fair	Poor	Good	Good	Poor	Fair
3052: OST-----	Good	Good	Fair	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor	Fair
CLARK-----	Good	Good	Fair	Fair	Fair	Fair	Poor	Very poor	Good	Good	Very poor	Fair
3170: PENALOSA-----	Good	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor	Good
3171: PENALOSA-----	Good	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor	Good
3535: SHELLABARGER----	Good	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor	Good
NALIM-----	Good	Good	Good	Good	Good	Fair	Fair	Poor	Good	Good	Poor	Fair
3639: TAVER-----	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor	Good
3966: WILLOWBROOK----	Good	Good	Good	Good	Good	Good	Poor	Poor	Fair	Fair	Poor	Fair
4004: YAGGY-----	Poor	Fair	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair
Aa: ALBION-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
SHELLABARGER----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Ab: ALBION-----	Poor	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
SHELLABARGER----	Poor	Fair	Good	---	---	Good	Very poor	Very poor	Fair	---	Very poor	Good
AED: ARENTS, EARTHEN DAM-----	---	---	---	---	---	---	---	---	---	---	---	---

WILDLIFE INTERPRETATIONS--Continued
Sedgwick County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
Ba: BLANKET-----	Good	Good	Fair	---	Good	Good	Poor	Very poor	Good	---	Very poor	Fair
Bb: BLANKET-----	Good	Good	Fair	---	Good	Good	Poor	Very poor	Good	---	Very poor	Fair
BRR: BREWER-----	Good	Good	Fair	---	---	Good	Poor	Poor	Good	---	Poor	Fair
Ca: CANADIAN-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Cb: CANADIAN-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
WALDECK-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
Cc: CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
Cd: CLARK-----	Fair	Good	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	---	Very poor	Fair
OST-----	Good	Good	Fair	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Ce: CLIME-----	Fair	Fair	Good	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
Ea: ELANDCO-----	Good	Good	Fair	---	---	Good	Poor	Very poor	Good	---	Very poor	Fair
Eb: ELANDCO-----	Good	Good	Fair	---	---	Good	Poor	Very poor	Good	---	Very poor	Fair
Ec: ELANDCO-----	Very poor	Poor	Fair	---	---	Good	Poor	Very poor	Poor	---	Very poor	Fair
Fa: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Fb: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Fc: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Ga: GOESSEL-----	Fair	Fair	Fair	---	---	Fair	Poor	Fair	Fair	---	Poor	Fair
Gb: GOESSEL-----	Fair	Fair	Fair	---	---	Fair	Poor	Fair	Fair	---	Poor	Fair
Ia: IRWIN-----	Good	Good	Good	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Ib: IRWIN-----	Good	Good	Good	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Ic: IRWIN-----	Good	Good	Good	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
INT: AQUOLLS-----	---	---	---	---	---	---	---	---	---	---	---	---
KAA: KASKI-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
La: LESHO-----	Fair	Fair	Fair	---	---	Fair	Fair	Fair	Fair	---	Fair	Fair
Lb: LINCOLN-----	Poor	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair

WILDLIFE INTERPRETATIONS--Continued
Sedgwick County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
M-W: MISCELLANEOUS WATER-----	---	---	---	---	---	---	---	---	---	---	---	---
Ma: MILAN-----	Good	Good	Good	---	---	Fair	Fair	Poor	Good	---	Poor	Fair
Mb: MILAN-----	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Mc: MILAN-----	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Na: NARON-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Oc: WELLSFORD-----	Poor	Poor	Good	Very poor	Very poor	---	Very poor	Very poor	Poor	Very poor	Very poor	Good
Od: WELLSFORD-----	Very poor	Very poor	Good	Very poor	Very poor	---	Very poor	Very poor	Very poor	Very poor	Very poor	Good
ROCK OUTCROP----	---	---	---	---	---	---	---	---	---	---	---	---
Pa: PITS-----	---	---	---	---	---	---	---	---	---	---	---	---
Pb: PLEVNA-----	Poor	Fair	Fair	---	---	Fair	Good	Good	Fair	---	Good	Fair
Pc: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
Pd: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
TIVOLI-----	Poor	Poor	Fair	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
Ra: RENFROW-----	Good	Good	Fair	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Rb: RENFROW-----	Good	Good	Fair	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Rc: RENFROW-----	Good	Good	Fair	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
WELLSFORD-----	Poor	Poor	Good	Very poor	Very poor	---	Very poor	Very poor	Poor	Very poor	Very poor	Good
Rd: ROSEHILL-----	Fair	Good	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
Sa: SHELLABARGER----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Sb: SHELLABARGER----	Fair	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Sc: SHELLABARGER----	Fair	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Ta: TABLER-----	Good	Good	Fair	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Tb: TABLER-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
DRUMMOND-----	Poor	Fair	Fair	---	Poor	Poor	Fair	Fair	Fair	---	Fair	Poor

WILDLIFE INTERPRETATIONS--Continued
Sedgwick County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
Ua: URBAN LAND-----	---	---	---	---	---	---	---	---	---	---	---	---
CANADIAN-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Ub: URBAN LAND-----	---	---	---	---	---	---	---	---	---	---	---	---
ELANDCO-----	Good	Good	Fair	---	---	Good	Poor	Very poor	Good	---	Very poor	Fair
Uc: URBAN LAND-----	---	---	---	---	---	---	---	---	---	---	---	---
FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Ud: URBAN LAND-----	---	---	---	---	---	---	---	---	---	---	---	---
IRWIN-----	Good	Good	Good	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Ue: URBAN LAND-----	---	---	---	---	---	---	---	---	---	---	---	---
TABLER-----	Good	Good	Fair	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Va: VANOSS-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Vb: VANOSS-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Vc: VANOSS-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Vd: VANOSS-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Ve: VERNON-----	Fair	Fair	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
Vf: VERNON-----	Fair	Fair	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
W: WATER-----	---	---	---	---	---	---	---	---	---	---	---	---
Wa: WALDECK-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
Wb: WAURIKA-----	Fair	Good	Fair	---	---	Fair	Fair	Fair	Fair	---	Fair	Fair

YIELDS PER ACRE OF PASTURE AND HAYLAND
Sedgwick County, Kansas

Use and Explanation of Pastureland and Hayland Interpretations

This subsection provides information concerning the suitability of soils for the production of pasture and hayland. This subsection may contain pasture and hayland suitability groupings, land capability and yield estimates, yield estimates for individual grasses or legumes, or other information pertaining to the production of forage.

Pasture and Hayland Suitability Groupings

Soils are placed in pasture and hayland groups according to their suitability for the production of forage. The soils in each group are enough alike to be suited to the same grasses or legumes, to have similar limitations and hazards, to require similar management, and to have similar productivity and other responses to management. Thus, the pasture and hayland suitability group is a convenient way of grouping the soils for their management. If used, these groupings are identified and described in other reports in the subsection.

Yield Estimates

The average yields per acre that can be expected of the principal pasture or hayland crops, under a high level of management, are presented in this subsection. In any given year, yields may be higher or lower than those indicated in the tables because of variations in rainfall or other climatic factors. The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation are also important management practices.

The Pasture and Hayland table show yield estimates in tons per acre and animal unit months for pasture and hayland groups. An animal unit month is the amount of forage required by one animal unit (AU) for 30 days. On animal unit (AU) is one (1000 pound) mature cow and a calf up to weaning age (usually six months of age) or their equivalent. The Natural Resources Conservation Service uses 900 pounds of air dry forage as the amount needed to meet this requirement. To maintain a healthy and vigorous plant community, the degree of use should never be greater than 50 percent. Therefore only 25 percent of the total biomass grown is considered consumed by the grazing animal. Animal Unit Months can be converted to air dry pounds per acre production by multiplying the AUM by 30 days, then by 30 pounds per day, and then by four. This figure is the amount of total forage production.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil in the Nontechnical Description section. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth brome grass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
015LS: Ladysmith-----	2s	---	---	---	---	---
079CR: Crete-----	2s	2s	3.20	5.50	---	---
079CT: Crete-----	2e	2e	3.20	5.50	---	---
079DE: Detroit-----	1	1	---	---	---	---
079DU: Drummond-----	6s	---	---	---	---	---
079FA: Farnum-----	1	1	3.50	7.00	---	---
079FE: Farnum-----	3e	---	---	---	---	---
079GD: Geary-----	2e	2e	3.40	7.00	---	---
079KA: Kaski-----	2w	---	3.00	6.50	---	---
079LA: Ladysmith-----	2s	---	3.00	---	---	---
079LB: Ladysmith-----	3e	---	3.00	---	---	---
079SM: Smolan-----	2e	2e	---	---	---	---
095AD: Albion-----	6e	---	---	---	---	---
095LA: Lincoln-----	6w	---	---	---	---	---
095WA: Waldeck-----	3w	---	3.50	5.00	---	---
191BA: Bethany-----	2c	---	---	---	---	---
191BB: Bethany-----	2e	---	---	---	---	---
191DR: Dale-----	1	---	5.50	---	---	---
Reinach-----	1	---	5.00	---	---	---
191EA: Elandco-----	1	---	---	---	---	---
191LO: Lesho-----	3w	---	3.00	5.00	6.00	---
1011: Albion-----	3e	---	2.00	---	4.00	---
Shellabarger-----	2e	---	2.20	6.50	4.50	9.00
1070: Avans-----	1	---	3.50	---	---	---
1071: Avans-----	1	---	3.50	---	---	---
1072: Avans-----	2e	---	3.50	---	---	---
2204: Jamash-----	4e	---	---	---	---	---
Piedmont-----	2e	---	---	---	---	---

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth brome grass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
2205: Jamash-----	4e	---	---	---	---	---
Piedmont-----	3e	---	---	---	---	---
2207: Jamash-----	6e	---	---	---	---	---
2381: Kanza-----	5w	---	---	---	---	---
Ninnescah-----	5w	---	---	---	---	---
2587: Imano-----	3w	---	3.00	5.00	6.00	---
2948: Nalim-----	2e	2e	3.50	6.50	6.00	9.00
3052: Ost-----	2c	---	---	---	---	---
Clark-----	2c	---	---	---	---	---
3170: Penalosa-----	2c	1	3.00	7.00	---	---
3171: Penalosa-----	2c	1	3.00	7.00	---	---
3535: Shellabarger-----	2e	---	2.20	6.50	4.50	9.00
Nalim-----	2e	2e	3.50	6.50	6.00	9.00
3639: Taver-----	2s	---	4.00	8.00	6.00	11.00
3966: Willowbrook-----	3e	2e	4.00	7.00	---	---
4004: Yaggy-----	3e	2e	4.50	7.50	---	---
Aa: Albion-----	3e	---	2.00	4.50	4.00	8.50
Shellabarger-----	2e	---	2.50	6.50	5.00	9.00
Ab: Albion-----	6e	---	---	---	---	---
Shellabarger-----	6e	---	---	---	---	---
AED: Arents, Earthen Dam-----	8	---	---	---	---	---
Ba: Blanket-----	1	---	---	---	---	---
Bb: Blanket-----	2e	---	---	---	---	---
BRR: Brewer-----	1	---	---	---	---	---
Ca: Canadian-----	1	---	4.00	6.50	---	---
Cb: Canadian-----	1	---	4.00	6.50	---	---
Waldeck-----	3w	---	3.50	5.00	7.00	11.00
Cc: Carwile-----	2w	---	---	---	---	---
Cd: Clark-----	3e	---	---	---	---	---

YIELDS PER ACRE OF PASTURE AND HAYLAND--Continued
Sedgwick County, Kansas

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(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth brome grass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Ost-----	2e	---	---	---	---	---
Ce: Clime-----	4e	---	1.60	---	---	---
Ea: Elandco-----	1	---	---	---	---	---
Eb: Elandco-----	2w	---	---	---	---	---
Ec: Elandco-----	5w	---	---	---	---	---
Fa: Farnum-----	1	1	3.50	7.00	6.00	10.00
Pb: Farnum-----	2e	2e	3.00	6.50	6.00	9.00
Fc: Farnum-----	1	1	2.50	7.00	6.00	10.00
Ga: Goessel-----	2s	---	3.00	4.00	4.00	9.00
Gb: Goessel-----	3e	---	2.60	4.00	4.00	9.00
Ia: Irwin-----	3e	---	3.00	6.50	5.00	10.00
Ib: Irwin-----	4e	---	2.60	4.00	5.00	10.00
Ic: Irwin-----	4e	---	2.20	5.00	4.00	9.00
INT: Aquolls-----	5w	---	---	---	---	---
KAA: Kaski-----	2w	---	3.00	6.50	---	---
La: Lesho-----	3w	---	3.00	5.00	6.00	10.00
Lb: Lincoln-----	6w	---	---	---	---	---
M-W: Miscellaneous Water-----	---	---	---	---	---	---
Ma: Milan-----	2e	2e	3.50	6.50	6.00	9.00
Mb: Milan-----	3e	---	---	---	5.00	10.00
Mc: Milan-----	3e	---	---	---	4.50	8.00
Na: Naron-----	1	1	3.50	7.00	6.00	10.00
Oc: Wellsford-----	4e	---	---	---	---	---
Od: Wellsford-----	6e	---	---	---	---	---
Rock Outcrop-----	8	---	---	---	---	---
Pa: Pits-----	---	---	---	---	---	---
Pb: Plevna-----	5w	---	---	---	---	---

YIELDS PER ACRE OF PASTURE AND HAYLAND--Continued
Sedgwick County, Kansas

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(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth brome grass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Pc: Pratt-----	3e	3e	3.00	5.50	3.00	8.00
Pd: Pratt-----	4e	3e	2.50	5.50	2.00	8.00
Tivoli-----	7e	---	---	---	---	---
Ra: Renfrow-----	3e	---	---	---	---	---
Rb: Renfrow-----	4e	---	---	---	---	---
Rc: Renfrow-----	3e	---	---	---	---	---
Wellsford-----	4e	---	---	---	---	---
Rd: Rosehill-----	3e	---	1.80	3.50	---	---
Sa: Shellabarger-----	2e	---	2.50	6.50	5.00	9.00
Sb: Shellabarger-----	3e	---	2.00	6.00	4.50	9.00
Sc: Shellabarger-----	3e	---	1.50	5.50	4.00	9.00
Ta: Tabler-----	2s	---	---	---	---	---
Tb: Tabler-----	2s	---	---	---	---	---
Drummond-----	6s	---	---	---	---	---
Ua: Urban Land-----	---	---	---	---	---	---
Canadian-----	1	---	4.00	6.50	---	---
Ub: Urban Land-----	---	---	---	---	---	---
Elandco-----	1	---	---	---	---	---
Uc: Urban Land-----	---	---	---	---	---	---
Farnum-----	2e	2e	3.00	6.50	6.00	9.00
Ud: Urban Land-----	---	---	---	---	---	---
Irwin-----	3e	---	3.00	6.50	5.00	10.00
Ue: Urban Land-----	---	---	---	---	---	---
Tabler-----	2s	---	---	---	---	---
Va: Vanoss-----	1	---	3.50	6.50	---	---
Vb: Vanoss-----	2e	---	3.00	6.00	---	---
Vc: Vanoss-----	3e	---	2.00	5.00	---	---
Vd: Vanoss-----	3e	---	2.00	5.00	---	---
Ve: Vernon-----	3e	---	---	---	---	---

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth brome grass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Vf: Vernon-----	4e	---	---	---	---	---
W: Water-----	---	---	---	---	---	---
Wa: Waldeck-----	3w	---	3.50	5.00	7.00	11.00
Wb: Waurika-----	2w	---	---	---	---	---

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County, Kansas

A Conservation Tree/Shrub Suitability Group (CTSG), formerly Windbreak Suitability Group, is a physiographic unit or area having similar climatic and edaphic characteristics that control the selection and height growth of trees and shrubs.

In this table, the Conservation Tree and Shrub Grouping is expressed as a group index number. The group index for Conservation Tree and Shrub groups (CTSG) are a guide for species best suited for different kinds of soil and for prediction height, growth, and effectiveness. The groupings can be used when selection woody plants for windbreaks, wildlife plantings riparian buffers, reforestation, other environmental plantings, recreation, landscaping, wetland restoration or enhancement and critical area plantings. CTSG's are developed to assure satisfactory species selection and adaptation to specific conditions of soil, climate and physiography. CTSG's are a guide for selection species best suited for different kinds of soil and prediction height growth and effectiveness.

All soil series mapped in the state have been placed in 10 groups of similar soil characteristics. Groups 1, 2, 3, 4, 6, and 9 are further divided into subgroups. In addition, all groups provide information by Major Land Resource Areas.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters a tree or shrub may be well or poorly suited because of soil characteristics. Each tree or shrub also has definable potentials of height growth depending on the factors just mentioned. Accurate definitions of potential heights are necessary for proper windbreak planning and design.

Windbreaks protect livestock, buildings, roads and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low-growing and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not grow trees originally. Knowledge of how trees perform on such land can be gained only by observing and recording their performance where trees have been planted and survived. The problem is compounded by the fact that many favorite windbreak species are not indigenous to the areas in which they are planted.

The Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups shows the adapted species listing for each group index number. Showing the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates are based on measurements and observation of established plantings that have been given adequate care. This information should be used to determine the placement of a windbreak, the area protected and the arrangement of species.

A number of attributes are included in the CTSG species tables for each group number found in this section of the Field Office Technical Guide. These attributes were rated subjectively and assigned a relative value to further assist those unfamiliar with individual species characteristics or desirability for the intended use. Definitions and explanations can be found. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery. See part 537 of the National Forestry Manual for additional information.

In the Tree and Shrub Management table interpretive ratings are given for various aspects of forest and conservation tree and shrub management. Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. Well suited indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. Moderately well suited indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable and fair performance can be expected. Some maintenance is needed. Poorly suited indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. Unsited indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

The paragraphs that follow indicate the soil properties considered in rating the soils for forest and conservation tree and shrub management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet. Also, in the Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups.

Ratings in the columns suitability for hand planting and suitability for mechanical planting are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column suitability for mechanical site preparation (surface) are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 1-foot is considered in the ratings.

Ratings in the column suitability for mechanical site preparation (deep) are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column potential for seedling mortality are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality. See the National Forestry Manual, Subpart B for criteria used in rating management concerns. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
015LS: Ladysmith-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	High Wetness
079CR: Crete-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
079CT: Crete-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
079DE: Detroit-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Poorly suited Stickiness	Well suited	Low
079DU: Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Salinity Soil reaction
079FA: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
079FE: Farnum-----	3	Moderately suited Stickiness	Moderately suited Slope Stickiness	Well suited	Well suited	Low
079GD: Geary-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
079KA: Kaski-----	1	Well suited	Well suited	Well suited	Well suited	Low
079LA: Ladysmith-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
079LB: Ladysmith-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
079SM: Smolan-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
095AD: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
095LA: Lincoln-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
095WA: Waldeck-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
191BA: Bethany-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
191BB: Bethany-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
191DR: Dale-----	1	Well suited	Well suited	Well suited	Well suited	Low
191EA: Reinach-----	1	Well suited	Well suited	Well suited	Well suited	Low
191EA: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
191LO: Lesho-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
1011: Albion-----	6G	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
1070: Avans-----	3	Well suited	Well suited	Well suited	Well suited	Low
1071: Avans-----	3	Well suited	Well suited	Well suited	Well suited	Low

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
1072: Avans-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
2204: Jamash-----	6	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Piedmont-----	4	Well suited	Well suited	Well suited	Well suited	Low
2205: Jamash-----	6	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Piedmont-----	4	Well suited	Well suited	Well suited	Well suited	Low
2207: Jamash-----	6	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
2381: Kanza-----	2	Well suited	Well suited	Well suited	Well suited	Low
Ninnescah-----	9W	Well suited	Well suited	Well suited	Well suited	Moderate Wetness Soil reaction
2587: Imano-----	9	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
2948: Nalim-----	3	Well suited	Well suited	Well suited	Well suited	Low
3052: Ost-----	8	Well suited	Well suited	Well suited	Well suited	Low
Clark-----	3	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
3170: Penalosa-----	4	Well suited	Well suited	Well suited	Well suited	Low
3171: Penalosa-----	4	Well suited	Well suited	Well suited	Well suited	Low
3535: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water Low
Nalim-----	3	Well suited	Well suited	Well suited	Well suited	Low
3639: Taver-----	3	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Moderate Available water
3966: Willowbrook-----	1	Well suited	Well suited	Well suited	Well suited	Moderate Available water
4004: Yaggy-----	1	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Aa: Albion-----	6G	Well suited	Well suited	Well suited	Well suited	Low
Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ab: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
AED: Arents, Earthen Dam-		Not rated	Not rated	Not rated	Not rated	Not rated
Ba: Blanket-----	4C	Well suited	Well suited	Well suited	Well suited	Low
Bb: Blanket-----	4C	Well suited	Well suited	Well suited	Well suited	Low
BRR: Brewer-----	4C	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Ca: Canadian-----	1	Well suited	Well suited	Well suited	Well suited	Low
Cb: Canadian-----	1	Well suited	Well suited	Well suited	Well suited	Low
Waldeck-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Cc: Carwile-----	1	Well suited	Well suited	Well suited	Well suited	Soil reaction High Wetness
Cd: Clark-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction Low
Ost-----	3	Well suited	Well suited	Well suited	Well suited	
Ce: Clime-----	8	Moderately suited Stickiness	Moderately suited Stickiness Slope	Poorly suited Stickiness	Well suited	Low
Ea: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Eb: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Ec: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Fa: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Fb: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Fc: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Ga: Goessel-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
Gb: Goessel-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
Ia: Irwin-----	4C	Well suited	Well suited	Well suited	Well suited	Low
Ib: Irwin-----	4C	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Ic: Irwin-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
INT: Aquolls-----		Well suited	Well suited	Well suited	Well suited	High Wetness Soil reaction
KAA: Kaski-----	1	Well suited	Well suited	Well suited	Well suited	Low
La: Lesho-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Lb: Lincoln-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
M-W: Miscellaneous Water-		Not rated	Not rated	Not rated	Not rated	Not rated
Ma: Milan-----	3	Well suited	Well suited	Well suited	Well suited	Low
Mb: Milan-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Mc: Milan-----	3	Well suited	Well suited	Well suited	Well suited	Low
Na: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Oc: Wellsford-----		Moderately suited Stickiness	Moderately suited Stickiness	Poorly suited Stickiness	Well suited	Low
Od: Wellsford-----		Moderately suited Stickiness	Moderately suited Stickiness Slope	Poorly suited Stickiness	Well suited	Low
Rock Outcrop-----		Not rated	Not rated	Not rated	Not rated	Not rated
Pa: Pits-----		Not rated	Not rated	Not rated	Not rated	Not rated

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County,
Kansas

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Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Pb: Plevna-----	2	Well suited	Well suited	Well suited	Unsuited Wetness	High Wetness
Pc: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
Pd: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Tivoli-----	7	Well suited	Poorly suited Slope	Poorly suited Slope	Poorly suited Slope	Low
Ra: Renfrow-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Rb: Renfrow-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Rc: Renfrow-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Wellsford-----		Moderately suited Stickiness	Moderately suited Stickiness	Poorly suited Stickiness	Well suited	Low
Rd: Rosehill-----	4C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
Sa: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Low
Sb: Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Sc: Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Ta: Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Tb: Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Moderate Salinity
Ua: Urban Land-----		Not rated	Not rated	Not rated	Not rated	Not rated
Canadian-----	1	Well suited	Well suited	Well suited	Well suited	Low
Ub: Urban Land-----		Not rated	Not rated	Not rated	Not rated	Not rated
Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Uc: Urban Land-----		Not rated	Not rated	Not rated	Not rated	Not rated
Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Ud: Urban Land-----		Not rated	Not rated	Not rated	Not rated	Not rated
Irwin-----	4C	Well suited	Well suited	Well suited	Well suited	Low
Ue: Urban Land-----		Not rated	Not rated	Not rated	Not rated	Not rated
Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Va: Vanoss-----	3	Well suited	Well suited	Well suited	Well suited	Low
Vb: Vanoss-----	3	Well suited	Well suited	Well suited	Well suited	Low
Vc: Vanoss-----	3	Well suited	Moderately suited	Well suited	Well suited	Low

CONSERVATION TREE AND SHRUB MANAGEMENT
Sedgwick County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Vd: Vanoss-----	3	Well suited	Slope Moderately suited Slope	Well suited	Well suited	Low
Ve: Vernon-----		Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Vf: Vernon-----		Moderately suited Stickiness	Moderately suited Slope Stickiness	Well suited	Well suited	Low
W: Water-----	1K	Not rated	Not rated	Not rated	Not rated	Not rated
Wa: Waldeck-----		Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Wb: Waurika-----		Well suited	Well suited	Well suited	Well suited	High Wetness

ENGINEERING INDEX PROPERTIES
Sedgwick County, Kansas

Engineering Index Properties table gives the engineering classifications and the range of index properties for the layers of each soil in the survey area. Depth to the upper and lower boundaries of each layer is indicated. Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, gravelly. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection. If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Engineering Index Properties table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
015LS: Ladysmith-----	0-7	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	15-25
	7-15	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-50
	15-30	Clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-50
	30-38	Clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-50
	38-60	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	85-95	40-65	25-45
079CR: Crete-----	0-5	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	90-100	30-40	5-15
	5-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	90-100	35-50	15-30
	9-19	Silty clay loam	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	19-27	Silty clay	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	27-38	Silty clay	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	38-48	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	100	95-100	30-55	10-35
	48-80	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	100	95-100	30-55	10-35
079CT: Crete-----	0-5	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	90-100	30-40	5-15
	5-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	90-100	35-50	15-30
	9-19	Silty clay	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	19-27	Silty clay	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	27-38	Silty clay	CH	A-7	0	0	100	100	100	90-100	50-65	25-40
	38-48	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	100	95-100	30-55	10-35
	48-80	Silt loam	CH, CL	A-6, A-7	0	0	100	100	100	95-100	30-55	10-35
079DE: Detroit-----	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	20-30
	11-36	Silty clay	CH	A-7	0	0	100	100	95-100	90-100	50-60	25-35
	36-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	25-45	10-25
079DU: Drummond-----	0-9	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-97	22-39	3-15
	9-60	Silty clay loam	CH, CL, MH	A-6, A-7	0	0	100	100	96-100	80-98	35-60	15-35
079FA: Farnum-----	0-14	Fine sandy loam	ML, SM	A-2, A-4	0	0	100	100	70-100	30-55	15-30	NP-5
	14-45	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	45-60	Sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
079FE: Farnum-----	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	11-45	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	45-60	Sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
079GD: Geary-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	4-15
	9-35		CL	A-6, A-7	0	0	100	100	96-100	85-100	35-50	15-25
	35-60		CL	A-6, A-7	0	0	100	100	96-100	85-100	30-45	11-22
079KA: Kaski-----	0-24	Loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	85-100	50-85	20-45	5-25
	24-41	Clay loam	CL, SC	A-4, A-6, A-7	0	0	100	95-100	85-100	45-85	25-45	7-25
	41-60	Clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	100	95-100	60-100	30-80	15-35	NP-20
079LA: Ladysmith-----	0-10	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	15-25
	10-45	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-50
	45-60	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-95	40-65	25-45
079LB: Ladysmith-----	0-10	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	15-25
	10-45	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-50
	45-60	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-95	40-65	25-45
079SM: Smolan-----	0-8	Silty clay loam	CL	A-7	0	0	100	100	95-100	85-100	42-50	22-28
	8-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	35-50	15-28
	15-40	Silty clay	CH	A-7	0	0	100	100	95-100	90-100	50-65	28-40
	40-60	Silty clay loam	CL	A-7	0	0	100	100	95-100	90-100	42-50	22-28
095AD: Albion-----	0-8	Sandy loam	ML, SM	A-2, A-4	0	0	100	75-100	60-90	25-55	15-30	NP-5
	8-16	Sandy loam	ML, SM	A-2, A-4	0	0	85-100	75-100	45-90	30-55	20-35	NP-10
	16-26	Coarse sandy loam	SM	A-1, A-2	0	0	85-100	75-90	40-70	15-30	15-30	NP-5
	26-60	Gravelly sand	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-5	40-100	40-90	30-70	5-30	15-30	NP-5
095LA: Lincoln-----	0-10	Loamy fine sand	SM	A-2	0	0	100	98-100	90-100	15-35	---	NP
	10-60	Stratified fine sand to clay loam	SM, SP-SM	A-2, A-3	0	0	100	98-100	82-100	5-35	---	NP
095WA: Waldeck-----	0-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-55	15-25	NP-5
	25-42	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-25	NP-5
42-60	Sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	80-100	40-60	1-35	---	NP	
191BA: Bethany-----	0-6	Silt loam	CL	A-6	0	0	98-100	96-100	85-100	65-95	28-40	11-20
	6-17	Clay	CH, CL	A-7	0	0	98-100	96-100	85-100	70-90	41-64	20-38
	17-60	Clay	CH, CL	A-6, A-7	0	0	85-100	80-100	80-100	51-85	30-60	15-38
191BB: Bethany-----	0-6	Silt loam	CL	A-6	0	0	98-100	96-100	85-100	65-95	28-40	11-20
	6-17	Clay	CH, CL	A-7	0	0	98-100	96-100	85-100	70-90	41-64	20-38
	17-60	Clay	CH, CL	A-6, A-7	0	0	85-100	80-100	80-100	51-85	30-60	15-38

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
191DR: Dale-----	0-21	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	65-98	25-35	5-15
	21-60	Silt loam	CL	A-4, A-6, A-7	0	0	95-100	95-100	90-100	65-98	30-43	8-20
Reinach-----	0-80	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	94-100	51-97	15-31	NP-10
191EA: Elandco-----	0-40	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-40	4-20
	40-60	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	65-95	20-45	4-25
191LO: Lesho-----	0-18	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	65-85	35-45	15-22
	18-32	Clay loam	CL	A-4, A-6, A-7-6	0	0	100	100	85-100	65-95	25-45	7-22
	32-60	Fine sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	0	100	95-100	30-85	5-45	---	NP
1011: Albion-----	0-9	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	75-100	60-90	25-45	0-25	NP-10
	9-16	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	85-100	75-100	50-95	25-40	20-30	NP-10
	16-27	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	85-100	75-100	50-95	25-40	20-30	NP-10
	27-48	Loamy coarse sand	SC, SC-SM, SM	A-1-b, A-2-4	0	0	85-100	75-90	40-70	15-30	0-25	NP-10
	48-80	Sand	GM, GP-GM, SM, SP-SM, GP-GC, SP-SC	A-3, A-1-b, A-2-4	0	0-5	40-100	35-85	30-70	5-30	0-20	NP-5
Shellabarger---	0-7	Sandy loam	SM, ML	A-4, A-2	0	0	95-100	95-100	75-100	30-55	0-30	NP-5
	7-11	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	11-19	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	19-33	Sandy loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	33-47	Coarse sandy loam	SC, SM, SP-SM, SC-SM, SP-SC	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	47-59	Loamy sand	SC, SM, SP-SM, SC-SM, SP-SC	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	59-73	Sand	SC, SM, SP-SM, SC-SM, SP-SC	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	73-80	Sand	SC, SM, SP-SM, SC-SM, SP-SC	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
1070: Avans-----	0-5	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	5-10	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	10-14	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	14-19	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	19-30	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	30-43	Loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	43-53	Loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	53-65	Silt loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	65-80	Loam	CL	A-6	0	0	99-100	99-100	95-100	80-95	30-35	10-15
1071: Avans-----	0-5	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	5-10	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	10-14	Silt loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	14-19	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	19-30	Loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	30-43	Loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	43-53	Silt loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	53-65	Silt loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	65-80	Loam	CL	A-6	0	0	99-100	99-100	95-100	80-95	30-35	10-15
1072: Avans-----	0-5	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	5-10	Loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	10-14	Silt loam	CL	A-6	0	0	100	100	95-100	80-100	25-30	10-15
	14-19	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	19-30	Loam	CL	A-6, A-7-6	0	0	100	100	95-100	80-95	35-45	15-20
	30-43	Loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	43-53	Silt loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	53-65	Silt loam	CL	A-6	0	0	100	100	95-100	80-95	30-35	10-15
	65-80	Loam	CL	A-6	0	0	99-100	99-100	95-100	80-95	30-35	10-15
2204: Jamash-----	0-4	Clay loam	CL	A-7-5, A-7-6	0	0	100	100	96-100	75-98	40-50	15-25
	4-11	Silty clay loam	CL, CH	A-6, A-7	0	0	100	100	96-100	75-98	45-55	20-30
	11-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-99	40-50	15-25
	15-28	Weathered bedrock			---	---	---	---	---	---	---	---
	28-80	Weathered bedrock			---	---	---	---	---	---	---	---
Piedmont-----	0-4	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-43	10-20
	4-7	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-43	10-20
	7-13	Clay	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-50	13-26
	13-20	Clay	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-50	13-26
	20-24	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-60	15-34
	24-32	Silty clay	CH, CL, GC, SC	A-6, A-7	0	0	50-100	50-100	45-100	45-99	37-60	15-34
	32-80	Weathered bedrock			---	---	---	---	---	---	---	---

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
2205: Jamash-----	0-4	Clay loam	CL	A-7-5, A-7-6	0	0	100	100	96-100	75-98	40-50	15-25
	4-11	Silty clay loam	CL, CH	A-6, A-7	0	0	100	100	96-100	75-98	45-55	20-30
	11-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-99	40-50	15-25
	15-28	Weathered bedrock			---	---	---	---	---	---	---	---
	28-80	Weathered bedrock			---	---	---	---	---	---	---	---
Piedmont-----	0-4	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-43	10-20
	4-7	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-43	10-20
	7-13	Clay	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-50	13-26
	13-20	Clay	CL	A-6, A-7	0	0	100	100	96-100	75-98	31-50	13-26
	20-24	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-60	15-34
	24-32	Silty clay	CH, CL, GC, SC	A-6, A-7	0	0	50-100	50-100	45-100	45-99	37-60	15-34
	32-80	Weathered bedrock			---	---	---	---	---	---	---	---
2207: Jamash-----	0-4	Clay loam	CL	A-7-5, A-7-6	0	0	100	100	96-100	75-98	40-50	15-25
	4-11	Silty clay loam	CL, CH	A-6, A-7	0	0	100	100	96-100	75-98	45-55	20-30
	11-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-99	40-50	15-25
	15-28	Weathered bedrock			---	---	---	---	---	---	---	---
	28-80	Weathered bedrock			---	---	---	---	---	---	---	---
2381: Kanza-----	0-4	Sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	95-100	90-100	70-100	10-40	0-25	NP-10
	4-9	Loamy fine sand	SC, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	70-100	10-40	0-25	NP-10
	9-17	Loamy fine sand	SM, SC, SC-SM	A-2, A-4	0	0	95-100	90-100	50-85	10-30	0-25	NP-10
	17-33	Loamy fine sand	SM, SC-SM, SP-SM, SP-SC	A-2, A-3, A-4	0	0	90-100	85-100	65-100	5-25	0-20	NP-5
	33-80	Sand	SM, SC-SM, SP-SM, SP-SC	A-2, A-3, A-4	0	0	90-100	85-100	65-100	5-25	0-20	NP-5
Ninnescah-----	0-6	Sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	70-100	20-49	15-34	NP-15
	6-14	Sandy loam	SC, SC-SM, SM	A-2-4, A-2-6, A-4, A-6	0	0	100	100	70-100	20-49	15-34	NP-15
	14-19	Sandy loam	SC, SC-SM, SM	A-6, A-2-4, A-4 A-2-6, A-4	0	0	100	100	70-100	20-49	15-34	NP-15
	19-30	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	70-100	30-49	15-26	NP-10
	30-37	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	70-100	30-49	15-26	NP-10
	37-52	Sandy loam	SC-SM, SM, SP-SM, SP-SC	A-2-4, A-3	0	0	100	90-100	60-90	5-35	0-20	NP-6
	52-80	Loamy sand	SP-SM, SC-SM, SM, SP-SC	A-2-4, A-3	0	0	100	90-100	60-90	5-35	0-20	NP-6
2587: Imano-----	0-10	Clay loam	CL	A-7-6, A-6	0	0	100	100	90-100	70-80	35-45	15-22
	10-25	Loam	CL	A-4, A-6, A-7-6	0	0	100	100	85-100	60-80	25-45	7-22
	25-55	Stratified fine sand to sand	SP, SP-SM	A-1, A-2, A-3, A-4	0	0	100	95-100	30-55	0-10	0-10	NP
	55-80	Coarse sand	SP-SM, SP	A-1, A-2, A-3, A-4	0	0	100	95-100	30-55	0-5	0-10	NP
2948: Nalim-----	0-6	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	6-9	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	9-13	Clay loam	SC, CL, SM, ML	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	13-21	Clay loam	SC, CL, SM, ML	A-7-6, A-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	21-31	Clay loam	SC, CL, SM, ML	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	31-39	Sandy clay loam	SC, CL	A-6, A-4, A-2-6	0	0	95-100	95-100	65-100	30-80	25-40	10-20
	39-44	Gravelly sandy clay loam	SC, CL	A-6, A-4, A-2-6	0	0	95-100	95-100	65-100	30-80	25-40	10-20
	44-52	Sandy clay loam	SC, CL	A-2, A-4, A-6	0	0	95-100	95-100	60-90	15-70	25-40	10-20
	52-62	Loamy coarse sand	SC, SC-SM, SM	A-1-b, A-2	0	0	85-100	75-90	40-70	15-30	0-25	NP-10
	62-72	Gravelly loamy coarse sand	GM, GP-GM, SM, SP-SM, SP-SC, GP- GC, SC-SM, GC-GM	A-3, A-1, A-2	0	0	40-100	35-85	30-70	5-30	0-20	NP-5
	72-80	Stratified sand to gravelly loamy coarse sand	GM, GP-GM, SM, SP-SM, GC-GM, SC- SM, GP-GC, SP-SC	A-3, A-1, A-2	0	0	40-100	35-85	30-70	5-30	0-20	NP-5

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
3052: Ost-----	0-8	Loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-75	20-35	5-15
	8-12	Loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	60-80	30-45	10-20
	12-18	Loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	60-80	30-45	10-20
	18-23	Clay loam	CL, SC	A-6, A-7	0	0	95-100	90-100	80-100	35-80	30-45	10-20
	23-38	Clay loam	CL, SC, SC- SM, CL-ML	A-2, A-4, A-6	0	0	85-100	85-100	60-100	30-80	20-40	5-20
	38-54	Loam	CL, SC, SC- SM, CL-ML	A-2, A-4, A-6	0	0	85-100	85-100	60-100	30-80	20-40	5-20
	54-80	Loam	CL, SC, SC- SM, CL-ML	A-2, A-4, A-6	0	0	85-100	85-100	60-100	30-80	20-40	5-20
Clark-----	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	80-95	60-75	25-35	5-15
	11-16	Loam	CL	A-6	0	0	100	95-100	80-100	50-80	30-40	10-20
	16-28	Loam	CL	A-4	0	0	100	95-100	80-100	50-80	30-40	10-20
	28-45	Fine sandy loam	CL	A-4	0	0	100	95-100	80-100	50-80	30-40	10-20
	45-65	Fine sandy loam	CL	A-4	0	0	100	95-100	80-100	50-80	30-40	10-20
	65-80	Very fine sandy loam	CL	A-4	0	0	100	95-100	80-100	50-80	30-40	10-20
3170: Penalosa-----	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	80-98	21-37	2-13
	5-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	80-98	21-37	2-13
	10-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-26
	14-22	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-26
	22-28	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	28-34	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	34-39	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	90-99	37-60	15-34
	39-48	Silt loam	ML, CL-ML, CL	A-6, A-4	0	0	100	100	96-100	80-98	21-37	2-13
	48-61	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	61-71	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	71-80	Clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	80-99	37-60	15-34
3171: Penalosa-----	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	80-98	21-37	2-13
	5-10	Silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	80-98	21-37	2-13
	10-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-26
	14-22	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-26
	22-28	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	28-34	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	34-39	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	90-99	37-60	15-34
	39-48	Silt loam	ML, CL-ML, CL	A-6, A-4	0	0	100	100	96-100	80-98	21-37	2-13
	48-61	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	61-71	Silty clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	85-99	37-60	15-34
	71-80	Clay loam	CH, CL	A-6, A-7	0	0	100	96-100	96-100	80-99	37-60	15-34
3535: Shellabarger---	0-7	Sandy loam	SM, ML	A-4, A-2	0	0	95-100	95-100	75-100	30-55	0-30	NP-5
	7-11	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	11-19	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	19-33	Sandy loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	33-47	Coarse sandy loam	SC, SM, SP- SM, SC-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	47-59	Loamy sand	SC, SM, SP- SM, SC-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	59-73	Sand	SC, SM, SP- SM, SC-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
Nalim-----	73-80	Sand	SC, SM, SP- SM, SC-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	0-30	NP-10
	0-6	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	6-9	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	9-13	Clay loam	SC, CL, SM, ML	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	13-21	Clay loam	SC, CL, SM, ML	A-7-6, A-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	21-31	Clay loam	SC, CL, SM, ML	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
	31-39	Sandy clay loam	SC, CL	A-6, A-4, A- 2-6	0	0	95-100	95-100	65-100	30-80	25-40	10-20
	39-44	Gravelly sandy clay loam	SC, CL	A-6, A-4, A- 2-6	0	0	95-100	95-100	65-100	30-80	25-40	10-20
	44-52	Sandy clay loam	SC, CL	A-2, A-4, A-6	0	0	95-100	95-100	60-90	15-70	25-40	10-20
	52-62	Loamy coarse sand	SC, SC-SM, SM	A-1-b, A-2	0	0	85-100	75-90	40-70	15-30	0-25	NP-10
	62-72	Gravelly loamy coarse sand	GM, GP-GM, SM, SP-SM, GC-GM, SC- SM, GP-GC, SP-SC	A-3, A-1, A-2	0	0	40-100	35-85	30-70	5-30	0-20	NP-5
	72-80	Stratified sand to gravelly loamy coarse sand	GM, GP-GM, SM, SP-SM, GC-GM, SC- SM, GP-GC, SP-SC	A-3, A-1, A-2	0	0	40-100	35-85	30-70	5-30	0-20	NP-5
3639: Taver-----	0-7	Loam	CL	A-4, A-6	0	0	100	100	96-100	65-85	28-34	9-14
	7-17	Silty clay loam	CH, CL	A-7-6	0	0	100	100	96-100	90-99	48-60	30-40
	17-33	Silty clay	CH, CL	A-7-6	0	0	100	100	96-100	90-99	48-60	30-40
	33-53	Silty clay loam	CH, CL	A-7-6	0	0	100	100	96-100	90-99	48-60	30-40
	53-64	Clay loam	CL	A-4, A-6	0	0	100	100	90-100	60-80	30-40	15-20
	64-80	Sandy clay loam	CL	A-4, A-6	0	0	100	100	90-100	60-80	30-40	15-20

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
3966: Willowbrook----	0-4	Fine sandy loam	SC, SC-SM	A-4	0	0	100	99-100	90-100	36-45	20-30	5-10
	4-9	Fine sandy loam	SC, SC-SM	A-4	0	0	100	99-100	90-100	36-45	20-30	5-10
	9-13	Fine sandy loam	SC-SM, SC	A-4	0	0	100	99-100	92-100	34-42	20-30	5-10
	13-17	Fine sandy loam	SM, SC-SM, SC	A-2-4, A-4	0	0	100	99-100	90-100	34-42	20-30	5-10
	17-19	Loam	SC, SC-SM, SM, CL-ML	A-2-4, A-4	0	0	100	90-100	70-95	25-58	15-25	NP-10
	19-26	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	98-100	90-100	70-95	25-45	15-25	NP-10
	26-45	Coarse sand	SP-SM, SP	A-3, A-1-b	0	0	90-100	80-100	35-75	1-10	0-0	NP
	45-51	Coarse sand	SP-SM, SP	A-1-b, A-3	0	0	85-100	75-95	35-55	1-10	0-0	NP
	51-80	Stratified gravelly coarse sand to sand	SP-SM, SP	A-1-b, A-3	0	0	85-100	75-95	35-55	1-10	0-0	NP
	4004: Yaggy-----	0-5	Fine sandy loam	CL-ML, SC-SM, SM	A-4	0	0	100	99-100	85-100	40-65	10-25
5-11		Fine sandy loam	CL-ML, SC-SM, SM	A-4	0	0	100	99-100	85-100	40-60	10-25	5-10
11-14		Stratified very fine sandy loam to silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	75-95	60-80	10-35	5-15
14-24		Fine sand	SP, SP-SM	A-2-4, A-3	0	0	100	80-100	70-95	1-10	0-0	NP
24-31		Fine sand	SP, SP-SM	A-2-4, A-3	0	0	100	80-100	70-98	1-12	0-0	NP
31-42		Fine sand	SP, SP-SM	A-2-4, A-3	0	0	100	80-100	70-97	1-12	0-0	NP
42-53		Stratified gravelly coarse sand	SP, SP-SM	A-1-b, A-3	0	0	85-100	75-98	35-55	1-10	0-0	NP
53-69		Stratified gravelly coarse sand to sand	SP, SP-SM	A-1-b, A-3	0	0	85-100	65-95	35-55	0-5	0-0	NP
69-80		Stratified gravelly coarse sand to sand	SP, SP-SM	A-1-b, A-3	0	0	85-100	75-95	35-55	0-5	0-0	NP
Aa: Albion-----		0-9	Sandy loam	ML, SM	A-2, A-4	0	0	100	75-100	60-90	25-55	15-30
	9-19	Sandy loam	ML, SM	A-2, A-4	0	0	85-100	75-100	45-90	30-55	20-35	NP-10
	19-26	Coarse sandy loam	SM	A-1, A-2	0	0	85-100	75-90	40-70	15-30	15-30	NP-5
	26-60	Sand	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-5	40-100	40-90	30-70	5-30	15-30	NP-5
	Shellabarger---	0-15	Sandy loam	ML, SM	A-2, A-4	0	0	95-100	95-100	75-100	30-55	15-30
15-40		Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
40-60		Sandy loam	SC, SC-SM, SM, SP-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	15-30	NP-10
Ab: Albion-----	0-9	Sandy loam	ML, SM	A-2, A-4	0	0	100	75-100	60-90	25-55	15-30	NP-5
	9-19	Sandy loam	ML, SM	A-2, A-4	0	0	85-100	75-100	45-90	30-55	20-35	NP-10
	19-26	Coarse sandy loam	SM	A-1, A-2	0	0	85-100	75-90	40-70	15-30	15-30	NP-5
	26-60	Sand	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-5	40-100	40-90	30-70	5-30	15-30	NP-5
	Shellabarger---	0-15	Sandy loam	ML, SM	A-2, A-4	0	0	95-100	95-100	75-100	30-55	15-30
15-40		Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
40-60		Sand	SC, SC-SM, SM, SP-SM	A-4, A-2	0	0	80-100	70-100	50-80	10-40	15-30	NP-10
AED: Arents, Earthen Dam-----	---	---	---	---	---	---	---	---	---	---	---	
Ba: Blanket-----	0-14	Silt loam	CL	A-6	0	0	98-100	96-100	85-100	65-95	28-40	11-20
	14-34	Silty clay	CH, CL	A-7	0	0	98-100	96-100	85-100	70-90	41-64	20-38
	34-60	Silty clay loam	CH, CL	A-6, A-7	0	0	85-100	80-100	80-100	51-85	30-60	15-38
Bb: Blanket-----	0-14	Silt loam	CL	A-6	0	0	98-100	96-100	85-100	65-95	28-40	11-20
	14-34	Silty clay	CH, CL	A-7	0	0	98-100	96-100	85-100	70-90	41-64	20-38
	34-60	Silty clay loam	CH, CL	A-6, A-7	0	0	85-100	80-100	80-100	51-85	30-60	15-38
BRR: Brewer-----	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	98-100	90-98	37-45	15-22
	14-66	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-70	16-38
Ca: Canadian-----	0-20	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-65	15-26	NP-7
	20-35	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	98-100	94-100	36-85	15-31	NP-10
	35-60	Fine sandy loam	CL, ML, SC, SM	A-2, A-4	0	0	100	98-100	90-100	15-85	15-31	NP-10

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Cb: Canadian-----	0-20	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-65	15-26	NP-7
	20-35	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	98-100	94-100	36-85	15-31	NP-10
	35-60	Fine sandy loam	CL, ML, SC, SM	A-2, A-4	0	0	100	98-100	90-100	15-85	15-31	NP-10
Waldeck-----	0-14	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-55	15-25	NP-5
	14-27	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-25	NP-5
Cc: Carwile-----	27-60	Sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	80-100	40-60	1-35	---	NP
	0-18	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	18-24	Clay loam	CL, SC	A-6, A-7	0	0	100	100	90-100	36-90	35-50	14-26
	24-47	Clay loam	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	47-60	Clay loam	CH, CL, SC	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
Cd: Clark-----	0-11	Clay loam	CL	A-6	0	0	100	95-100	90-100	50-90	30-40	10-20
	11-60	Clay loam	CL	A-6	0	0	100	95-100	90-100	55-90	25-40	10-25
Ost-----	0-7	Clay loam	CL	A-6	0	0	95-100	95-100	85-100	75-90	30-40	10-20
	7-15	Clay loam	CL	A-4, A-6	0	0	95-100	90-100	85-100	55-90	30-40	9-18
	15-19	Clay loam	CL, SC	A-2, A-4, A-6	0	0	95-100	90-100	80-100	30-90	25-40	8-18
	19-60	Clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	85-100	85-100	80-100	30-90	15-40	NP-18
Ce: Clime-----	0-9	Silty clay	CH	A-7-6	0	0-5	90-100	90-100	85-100	80-95	50-60	25-35
	9-27	Silty clay	CH, CL, MH	A-7	0	0	95-100	95-100	95-100	85-95	45-65	20-40
	27-34	Unweathered bedrock			---	---	---	---	---	---	---	---
Ea: Elandco-----	0-40	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-40	4-20
	40-60	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	65-95	20-45	4-25
Eb: Elandco-----	0-40	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-40	4-20
	40-60	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	65-95	20-45	4-25
Ec: Elandco-----	0-40	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-40	4-20
	40-60	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	65-95	20-45	4-25
Fa: Farnum-----	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	14-46	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	46-60	Clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
Fb: Farnum-----	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	14-46	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	46-60	Clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
Fc: Farnum-----	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	15-30	5-15
	14-28	Clay loam	CL, SC	A-6, A-7	0	0	100	100	70-90	45-80	35-50	15-30
	28-40	Clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	2-15
	40-60	Clay loam	SM, SP-SM	A-2, A-3	0	0	100	95-100	50-95	5-30	---	NP
Ga: Goessel-----	0-5	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-45
	5-60	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-75	30-50
Gb: Goessel-----	0-5	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-70	30-45
	5-60	Silty clay	CH	A-7-6	0	0	100	100	95-100	85-95	50-75	30-50
Ia: Irwin-----	0-13	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-45	15-20
	13-52	Silty clay	CH	A-7-6	0	0	100	95-100	95-100	85-95	50-60	25-30
	52-60	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	80-95	40-60	20-30
Ib: Irwin-----	0-13	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-45	15-20
	13-52	Silty clay	CH	A-7-6	0	0	100	95-100	95-100	85-95	50-60	25-30
	52-60	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	80-95	40-60	20-30
Ic: Irwin-----	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-45	15-20
	6-52	Silty clay	CH	A-7-6	0	0	100	95-100	95-100	85-95	50-60	25-30
	52-60	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	80-95	40-60	20-30
INT: Aquolls-----	0-72	Variable			---	---	---	---	---	---	---	
KAA: Kaski-----	0-24	Loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	85-100	50-85	20-45	5-25
	24-41	Clay loam	CL, SC	A-4, A-6, A-7	0	0	100	95-100	85-100	45-85	25-45	7-25
	41-60	Clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	100	95-100	60-100	30-80	15-35	NP-20

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
La: Lesho-----	0-10	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-85	25-40	7-20
	10-27	Loam	CL	A-4, A-6, A- 7-6	0	0	100	100	85-100	65-95	25-45	7-22
	27-60	Fine sand	SM, SP-SM	A-1, A-2, A- 3, A-4	0	0	100	95-100	30-85	5-45	---	NP
Lb: Lincoln-----	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-60	15-24	NP-7
	8-60	Stratified fine sand to clay loam	SM, SP-SM	A-2, A-3	0	0	100	98-100	82-100	5-35	---	NP
M-W: Miscellaneous Water-----	---	---	---	---	---	---	---	---	---	---	---	---
Ma: Milan-----	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	11-60	Clay loam	CH, CL, MH, SC	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
Mb: Milan-----	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	65-85	20-35	5-15
	11-60	Clay loam	CL, MH, SC, CH	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
Mc: Milan-----	0-6	Clay loam	CL	A-6	0	0	95-100	95-100	95-100	65-85	30-40	10-20
	6-60	Clay loam	CH, CL, MH, SC	A-6, A-7-6	0	0	95-100	95-100	65-100	45-80	35-55	11-25
Na: Naron-----	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-60	15-26	1-7
	8-50	Sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	80-100	36-60	26-40	8-18
	50-60	Fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	20-50	15-26	NP-7
Oc: Wellsford-----	0-7	Clay loam	CL	A-6, A-7-6	---	0-5	95-100	95-100	90-100	75-95	35-50	15-30
	7-15	Silty clay	CH, CL	A-7-6	---	0-5	95-100	95-100	85-100	75-95	45-70	20-40
	15-20	Weathered bedrock			---	---	---	---	---	---	---	---
Od: Wellsford-----	0-7	Clay loam	CL	A-6, A-7-6	---	0-5	95-100	95-100	90-100	75-95	35-50	15-30
	7-15	Silty clay	CH, CL	A-7-6	---	0-5	95-100	95-100	85-100	75-95	45-70	20-40
	15-20	Weathered bedrock			---	---	---	---	---	---	---	---
Rock Outcrop---	---	---	---	---	---	---	---	---	---	---	---	---
Pa: Pits-----	---	---	---	---	---	---	---	---	---	---	---	---
Pb: Plevna-----	0-9	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-26	NP-6
	9-35	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-26	NP-6
	35-60	Fine sand	SM, SP	A-2, A-3	0	0	100	90-100	50-90	4-35	---	NP
Pc: Pratt-----	0-18	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	18-36	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	36-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Pd: Pratt-----	0-18	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	18-36	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	36-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Tivoli-----	0-10	Loamy fine sand	SM	A-2	0	0	100	95-100	90-100	15-35	---	NP
	10-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
Ra: Renfrow-----	0-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-49	12-26
	9-13	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	37-49	15-26
	13-60	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-70	15-38
Rb: Renfrow-----	0-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-49	12-26
	9-13	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	37-49	15-26
	13-60	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-70	15-38
Rc: Renfrow-----	0-9	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-49	12-26
	9-13	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	37-49	15-26
	13-60	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-99	37-70	15-38
Wellsford-----	0-7	Clay loam	CL	A-6, A-7-6	---	0-5	95-100	95-100	90-100	75-95	35-50	15-30
	7-15	Silty clay	CH, CL	A-7-6	---	0-5	95-100	95-100	85-100	75-95	45-70	20-40
	15-20	Weathered bedrock			---	---	---	---	---	---	---	---
Rd: Rosehill-----	0-8	Silty clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	8-30	Silty clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
Sa: Shellabarger---	0-15	Sandy loam	ML, SM	A-2, A-4	0	0	95-100	95-100	75-100	30-55	15-30	NP-5
	15-40	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	40-60	Sand	SC, SC-SM, SM, SP-SM	A-4, A-2	0	0	80-100	70-100	50-80	10-40	15-30	NP-10

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Sb: Shellabarger----	0-15	Sandy loam	ML, SM	A-2, A-4	0	0	95-100	95-100	75-100	30-55	15-30	NP-5
	15-40	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	40-60	Sand	SC, SC-SM, SM, SP-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	15-30	NP-10
Sc: Shellabarger----	0-15	Sandy loam	ML, SM	A-2, A-4	0	0	95-100	95-100	75-100	30-55	15-30	NP-5
	15-40	Sandy clay loam	SC	A-4, A-6	0	0	95-100	85-100	70-90	35-50	25-40	8-20
	40-60	Sand	SC, SC-SM, SM, SP-SM	A-2, A-4	0	0	80-100	70-100	50-80	10-40	15-30	NP-10
Ta: Tabler-----	0-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	32-43	11-20
	9-32	Silty clay	CH, CL	A-7	0	0	100	100	96-100	90-99	41-65	18-35
	32-60	Silty clay	CH, CL	A-6, A-7	0	0	96-100	96-100	92-100	80-99	38-60	15-35
Tb: Tabler-----	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	96-100	65-97	22-31	2-10
	9-32	Silty clay	CH, CL	A-7	0	0	100	100	96-100	90-99	41-65	18-35
	32-60	Silty clay	CH, CL	A-6, A-7	0	0	96-100	96-100	92-100	80-99	38-60	15-35
Drummond-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-97	22-39	3-15
	8-48	Silty clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-98	35-60	15-35
	48-60	Variable			---	---	---	---	---	---	---	---
Ua: Urban Land-----	---	---	---	---	---	---	---	---	---	---	---	---
Canadian-----	0-20	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-65	15-26	NP-7
	20-35	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	98-100	94-100	36-85	15-31	NP-10
	35-60	Fine sandy loam	CL, ML, SC, SM	A-2, A-4	0	0	100	98-100	90-100	15-85	15-31	NP-10
Ub: Urban Land-----	---	---	---	---	---	---	---	---	---	---	---	---
Elandco-----	0-40	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-40	4-20
	40-60	Silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	65-95	20-45	4-25
Uc: Urban Land-----	---	---	---	---	---	---	---	---	---	---	---	---
Farnum-----	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	14-28		CL	A-6	0	0	100	100	85-100	60-80	30-40	10-15
	28-40	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	40-60	Clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
Ud: Urban Land-----	---	---	---	---	---	---	---	---	---	---	---	---
Irwin-----	0-13	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-45	15-20
	13-52	Silty clay	CH	A-7-6	0	0	100	95-100	95-100	85-95	50-60	25-30
	52-60	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	80-95	40-60	20-30
Ue: Urban Land-----	---	---	---	---	---	---	---	---	---	---	---	---
Tabler-----	0-9	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	32-43	11-20
	9-32	Silty clay	CH, CL	A-7	0	0	100	100	96-100	90-99	41-65	18-35
	32-60	Silty clay	CH, CL	A-6, A-7	0	0	96-100	96-100	92-100	80-99	38-60	15-35
Va: Vanoss-----	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-95	22-37	2-14
	13-16	Silty clay loam	CL	A-4, A-6, A-7	0	0	100	100	96-100	65-98	30-43	8-20
	16-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-20
Vb: Vanoss-----	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-95	22-37	2-14
	13-16	Silty clay loam	CL	A-4, A-6, A-7	0	0	100	100	96-100	65-98	30-43	8-20
	16-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-20
Vc: Vanoss-----	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-95	22-37	2-14
	13-16	Silty clay loam	CL	A-4, A-6, A-7	0	0	100	100	96-100	65-98	30-43	8-20
	16-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-20
Vd: Vanoss-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-95	22-37	2-14
	7-16	Silty clay loam	CL	A-4, A-6, A-7	0	0	100	100	96-100	65-98	30-43	8-20
	16-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	33-43	12-20
Ve: Vernon-----	0-8	Sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	100	100	60-70	30-40	10-30	4-15
	8-13	Sandy clay loam	CL, SC	A-6, A-7-6	0	0	95-100	90-100	80-100	35-95	25-50	11-30
	13-28	Silty clay	CH, CL	A-6, A-7-6	0	0	95-100	90-100	90-100	80-98	38-60	20-38
	28-60		CH, CL	A-6, A-7-6	---	0-5	90-100	85-100	65-100	65-96	30-60	15-38
Vf: Vernon-----	0-8	Sandy loam	SC, SC-SM	A-6, A-2, A-4	0	0	100	100	60-70	30-40	10-30	4-15
	8-13	Sandy clay loam	CL, SC	A-6, A-7-6	0	0	95-100	90-100	80-100	35-95	25-50	11-30
	13-28	Silty clay	CH, CL	A-6, A-7-6	0	0	95-100	90-100	90-100	80-98	38-60	20-38
	28-60		CH, CL	A-6, A-7-6	---	0-5	90-100	85-100	65-100	65-96	30-60	15-38
W: Water-----	---	---	---	---	---	---	---	---	---	---	---	---
Wa: Waldeck-----	0-14	Sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-55	15-25	NP-5
	14-27	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-25	NP-5
	27-60	Sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	80-100	40-60	1-35	---	NP

ENGINEERING INDEX PROPERTIES--Continued
Sedgwick County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
Wb: Waurika-----	In											
	0-15	Silt loam	CL	A-4, A-6	0	0	100	100	96-100	80-95	30-37	9-14
	15-40	Silty clay	CH, CL	A-7	0	0	95-100	95-100	90-100	80-98	41-66	20-40
	40-53	Silty clay	CH, CL	A-6, A-7	0	0	90-100	90-100	85-100	80-98	38-55	16-30
	53-60	Silty clay	CL	A-6, A-7	0	0	90-100	90-100	80-100	70-98	33-43	12-20

Physical Properties table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth moving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability ($K \rightarrow \text{sat}$) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity ($K \rightarrow \text{sat}$). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In Physical Properties table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the Physical Properties table as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to

wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.
- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams.
4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Explanation of Wind Erodibility Groups

Soil erodibility by wind is directly related to the percentage of dry non-erodible surface soil aggregates larger than 0.84 mm in diameter. From this percentage, the wind erodibility index (I-factor) is determined. The I-factor is an expression of the stability of these soil aggregates against breakdown by tillage and abrasion from wind erosion. Soils are placed in Wind Erodibility Groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 mm as shown in the following table.

WEG	Properties of Soil Surface Layer	Dry Soil Aggregates >0.84mm Percent	Wind Erodibility Index T/Ac/Yr (I)
1	Very fine sand, fine sand, sand, or coarse sand	1 2 3 5 7	310 1/ 250 220 180 160
2	Loamy very fine sand, loamy fine sand, loamy sand, loamy coarse sand, organic soil materials.	10	134
3	Very fine sandy loam, fine sandy loam, sandy loam, or coarse sandy loam.	25	86
4	Clay, silty clay, non-calcareous clay loam, or silty clay loam with >35 percent clay content.	25	86
4L	Calcareous 2/ loam, silt loam, clay loam, or silty clay loam.	25	86
5	Non-calcareous loam and silt loam with <20 percent clay content, or sandy clay loam, sandy clay, and hemic 3/ organic soil materials.	40	56
6	Non-calcareous loam and silt loam with >20 percent clay content, or non-calcareous clay loam with <35 percent clay content.	45	48
7	Silt, non-calcareous silty clay loam with >35 percent clay content and fibric 3/ organic soil material.	50	38
8	Soils not suitable for cultivation due to coarse fragments or wetness; wind erosion is not a problem.	--	0

1/ The "I" values for WEG 1 vary from 160 for coarse sands to 310 for very fine sands. Use an "I" of 220 as an average figure. For coarser sand that has gravel, use a lower figure. For a soil that has no gravel and very fine sand, use a higher figure. (Modification for coarse fragments is preparation.)

2/ Calcareous is a strongly or violently effervescent reaction to cold dilute (1N) HCL.

3/ See Soil Taxonomy for definition.

PHYSICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
015LS: Ladysmith----	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
	0-7	20		28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.37	.37	5	7	38
	7-15	5		40-60	1.35-1.50	0.00-0.06	0.10-0.15	6.0-8.9	1.0-3.0	.37	.37			
	15-30	5		40-60	1.35-1.50	0.00-0.06	0.10-0.15	6.0-8.9	1.0-3.0	.37	.37			
	30-38	5		40-60	1.35-1.50	0.00-0.06	0.10-0.15	6.0-8.9	1.0-3.0	.37	.37			
	38-60	7		35-55	1.40-1.60	0.00-0.60	0.10-0.19	3.0-5.9	0.0-1.0	.37	.37			
079CR: Crete-----	0-5	24	52	20-27	1.20-1.40	0.60-2.00	0.22-0.24	3.0-5.9	2.0-4.0	.37	.37	5	6	48
	5-9	20	49	27-35	1.20-1.40	0.20-0.60	0.21-0.23	6.0-8.9	1.0-3.0	.37	.37			
	9-19	7	48	35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	19-27	7	48	35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	27-38	7	48	35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	38-48	20	48	25-40	1.20-1.40	0.20-2.00	0.18-0.22	6.0-8.9	0.5-1.0	.43	.43			
	48-80	20	48	25-40	1.20-1.40	0.20-2.00	0.18-0.22	6.0-8.9	0.5-1.0	.43	.43			
079CT: Crete-----	0-5			20-27	1.20-1.40	0.60-2.00	0.22-0.24	3.0-5.9	2.0-4.0	.37	.37	5	6	48
	5-9			27-35	1.20-1.40	0.20-0.60	0.21-0.23	6.0-8.9	1.0-3.0	.37	.37			
	9-19			35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	19-27			35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	27-38			35-55	1.10-1.30	0.06-0.20	0.12-0.20	6.0-8.9	0.5-2.0	.37	.37			
	38-48			25-40	1.20-1.40	0.20-2.00	0.18-0.22	6.0-8.9	0.5-1.0	.43	.43			
	48-80			25-40	1.20-1.40	0.20-2.00	0.18-0.22	6.0-8.9	0.5-1.0	.43	.43			
079DE: Detroit-----	0-11	20	48	28-35	1.25-1.40	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.37	.37	5	7	38
	11-36	8	52	35-45	1.35-1.50	0.06-0.20	0.12-0.18	6.0-8.9	---	.37	.37			
	36-60	20	54	18-35	1.30-1.50	0.20-0.60	0.18-0.22	3.0-5.9	---	.37	.37			
079DU: Drummond----	0-9	38	36	20-30	1.35-1.55	0.60-2.00	0.08-0.12	0.0-2.9	0.5-1.0	.49	.49	2	4L	48
	9-60	6	46	35-60	1.40-1.65	0.00-0.06	0.06-0.12	6.0-8.9	---	.37	.37			
079FA: Farnum-----	0-14	63	26	8-14	1.45-1.55	2.00-6.00	0.13-0.18	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	14-45	34	36	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	45-60	65	15	12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
079FE: Farnum-----	0-11	42	38	14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	11-45	34	36	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	45-60	65	15	12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
079GD: Geary-----	0-9			15-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-4.0	.32	.32	5	6	48
	9-35			27-35	1.35-1.50	0.60-2.00	0.17-0.20	3.0-5.9	---	.43	.43			
	35-60			20-32	1.30-1.40	0.60-2.00	0.15-0.19	3.0-5.9	---	.43	.43			
079KA: Kaski-----	0-24	40	38	18-27	1.35-1.45	0.60-2.00	0.18-0.22	3.0-5.9	1.0-3.0	.28	.28	5	6	48
	24-41	35	38	18-35	1.40-1.50	0.60-2.00	0.13-0.19	3.0-5.9	---	.28	.28			
	41-60	39	42	8-30	1.45-1.55	0.60-2.00	0.13-0.19	0.0-2.9	---	.28	.28			
079LA: Ladysmith----	0-10	20	48	28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.37	.37	5	7	38
	10-45	5	45	40-60	1.35-1.50	0.00-0.06	0.10-0.15	6.0-8.9	1.0-3.0	.37	.37			
	45-60	7	48	35-55	1.40-1.60	0.00-0.60	0.10-0.19	3.0-5.9	0.0-1.0	.37	.37			
079LB: Ladysmith----	0-10	20	48	28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.37	.37	5	7	38
	10-45	5	45	40-60	1.35-1.50	0.00-0.06	0.10-0.15	6.0-8.9	1.0-3.0	.37	.37			
	45-60	7	48	35-55	1.40-1.60	0.00-0.60	0.10-0.19	3.0-5.9	0.0-1.0	.37	.37			
079SM: Smolan-----	0-8	5-15	50-75	18-35	1.30-1.40	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.37	.37	5	7	38
	8-15	5-15	50-75	18-35	1.30-1.40	0.20-0.60	0.21-0.23	3.0-5.9	1.0-3.0	.37	.37			
	15-40	5-15	40-65	35-50	1.30-1.45	0.06-0.20	0.12-0.18	6.0-8.9	0.5-2.0	.37	.37			
	40-60	5-15	50-60	27-35	1.30-1.40	0.20-0.60	0.18-0.20	3.0-5.9	0.1-1.0	.37	.37			
095AD: Albion-----	0-8			7-15	1.35-1.50	2.00-6.00	0.13-0.17	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	8-16			10-18	1.45-1.60	2.00-6.00	0.12-0.18	0.0-2.9	---	.20	.24			
	16-26			4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	---	.15	.20			
	26-60			2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	---	.15	.32			
095LA: Lincoln-----	0-10	84	6	5-15	1.35-1.50	5.95-19.98	0.06-0.11	0.0-2.9	0.5-0.5	.17	.17	5	2	134
	10-60			5-15	1.30-1.60	5.95-19.98	0.02-0.08	0.0-2.9	0.0-0.5	.17	.17			
095WA: Waldeck-----	0-25	68	20	8-16	1.50-1.60	2.00-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	25-42	68	20	8-16	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	---	.20	.20			
	42-60	96	2	1-4	1.55-1.65	5.95-19.98	0.05-0.07	0.0-2.9	---	.20	.24			
191BA: Bethany-----	0-6			15-27	1.30-1.50	0.60-2.00	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	6-17			35-50	1.35-1.55	0.20-0.60	0.12-0.18	3.0-5.9	---	.43	.37			
	17-60			35-50	1.35-1.55	0.60-2.00	0.12-0.18	3.0-5.9	---	.43	.37			
191BB: Bethany-----	0-6			15-27	1.30-1.50	0.60-2.00	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	6-17			35-50	1.35-1.55	0.20-0.60	0.12-0.18	3.0-5.9	---	.43	.37			
	17-60			35-50	1.35-1.55	0.60-2.00	0.12-0.18	3.0-5.9	---	.43	.37			
191DR: Dale-----	0-21	11	68	15-26	1.30-1.50	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	21-60	9	64	18-35	1.40-1.70	0.60-2.00	0.15-0.24	3.0-5.9	---	.37	.37			
	Reinach-----	0-80	14	12-18	1.30-1.55	0.60-2.00	0.13-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56

PHYSICAL PROPERTIES OF THE SOILS--Continued
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Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
191EA: Elandco-----	0-40	10	68	18-27	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	40-60	9	64	18-35	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	----	.43	.43			
191LO: Lesho-----	0-18	35	33	28-35	1.30-1.40	0.20-0.60	0.17-0.19	3.0-5.9	1.0-3.0	.28	.28	4	4L	86
	18-32	35	38	18-35	1.35-1.45	0.20-0.60	0.16-0.19	3.0-5.9	----	.28	.28			
	32-60	94	1	1-8	1.45-1.55	1.98-19.98	0.02-0.10	0.0-2.9	----	.15	.15			
1011: Albion-----	0-9	72	18	7-15	1.35-1.45	2.00-6.00	0.16-0.18	0.0-2.9	1.0-2.0	.20	.24	4	3	86
	9-16	80	7	10-18	1.45-1.55	2.00-6.00	0.12-0.18	0.0-2.9	1.0-2.0	.20	.24			
	16-27	84	5	10-18	1.45-1.55	2.00-6.00	0.12-0.18	0.0-2.9	1.0-2.0	.20	.24			
	27-48	87	6	4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	0.0-0.5	.17	.20			
	48-80	90	7	2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	0.0-0.0	.15	.32			
Shellabarger--	0-7	64	27	8-12	1.35-1.50	2.00-6.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	7-11	59	24	17-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-1.2	.28	.32			
	11-19	64	13	18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-0.5	.28	.32			
	19-33	69	8	18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-0.5	.28	.32			
	33-47	80	4	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	47-59	86	3	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	59-73	89	2	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	73-80	90	3	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
1070: Avans-----	0-5	32	48	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	5-10	31	49	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	10-14	25	53	13-26	1.40-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	14-19	25	45	27-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	1.0-3.0	.37	.37			
	19-30	27	46	26-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.37	.37			
	30-43	31	47	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-1.0	.32	.32			
	43-53	26	53	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.5	.32	.32			
	53-65	28	50	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
	65-80	30	49	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
1071: Avans-----	0-5	32	48	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	5-10	31	49	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	10-14	25	53	13-26	1.40-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	14-19	25	45	27-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	1.0-3.0	.37	.37			
	19-30	27	46	26-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.37	.37			
	30-43	31	47	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-1.0	.32	.32			
	43-53	26	53	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.5	.32	.32			
	53-65	28	50	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
	65-80	30	49	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
1072: Avans-----	0-5	32	48	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	5-10	31	49	15-26	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	10-14	25	53	13-26	1.40-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32			
	14-19	25	45	27-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	1.0-3.0	.37	.37			
	19-30	27	46	26-34	1.30-1.65	0.60-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.37	.37			
	30-43	31	47	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-1.0	.32	.32			
	43-53	26	53	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.5	.32	.32			
	53-65	28	50	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
	65-80	30	49	18-26	1.40-1.60	0.60-2.00	0.18-0.21	0.0-2.9	0.0-0.2	.32	.32			
2204: Jamash-----	0-4	22	46	30-40	1.30-1.60	0.20-0.60	0.18-0.22	3.0-5.9	1.0-3.0	.37	.37	2	7	38
	4-11	22	41	35-45	1.45-1.70	0.20-0.60	0.14-0.18	3.0-5.9	1.0-3.0	.37	.37			
	11-15	9	62	28-40	1.45-1.70	0.00-0.06	0.13-0.16	6.0-8.9	0.5-1.0	.32	.32			
	15-28	14	61	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
	28-80	10	64	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
Piedmont-----	0-4	26	44	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.37	.37	3	7	38
	4-7	26	44	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	7-13	18	35	32-50	1.45-1.70	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	13-20	8	37	32-60	1.45-1.70	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	20-24	5	44	35-55	1.35-1.70	0.00-0.06	0.12-0.22	6.0-8.9	0.5-1.0	.43	.43			
	24-32	4	55	35-55	1.35-1.70	0.00-0.06	0.06-0.18	6.0-8.9	0.5-1.0	.37	.37			
	32-80	----	----	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
2205: Jamash-----	0-4	22	46	30-40	1.30-1.60	0.20-0.60	0.18-0.22	3.0-5.9	1.0-3.0	.37	.37	2	7	38
	4-11	22	41	35-45	1.45-1.70	0.20-0.60	0.14-0.18	3.0-5.9	1.0-3.0	.37	.37			
	11-15	9	62	28-40	1.45-1.70	0.00-0.06	0.13-0.16	6.0-8.9	0.5-1.0	.32	.32			
	15-28	14	61	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
	28-80	10	64	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
Piedmont-----	0-4	26	44	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.37	.37	3	7	38
	4-7	26	44	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	7-13	18	35	32-50	1.45-1.70	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	13-20	8	37	32-60	1.45-1.70	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43			
	20-24	5	44	35-55	1.35-1.70	0.00-0.06	0.12-0.22	6.0-8.9	0.5-1.0	.43	.43			
	24-32	4	55	35-55	1.35-1.70	0.00-0.06	0.06-0.18	6.0-8.9	0.5-1.0	.37	.37			
	32-80	----	----	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
2207: Jamash-----	0-4	22	46	30-40	1.30-1.60	0.20-0.60	0.18-0.22	3.0-5.9	1.0-3.0	.37	.37	2	7	38
	4-11	22	41	35-45	1.45-1.70	0.20-0.60	0.14-0.18	3.0-5.9	1.0-3.0	.37	.37			
	11-15	9	62	28-40	1.45-1.70	0.00-0.06	0.13-0.16	6.0-8.9	0.5-1.0	.32	.32			
	15-28	14	61	----	1.85-2.00	0.06-0.20	----	----	----	----	----			
	28-80	10	64	----	1.85-2.00	0.06-0.20	----	----	----	----	----			

PHYSICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
2381: Kanza-----	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
	0-4	67	25	3-12	1.50-1.70	0.60-2.00	0.08-0.13	3.0-5.9	1.0-3.0	.20	.20	5	3	86
	4-9	80	14	3-12	1.50-1.70	0.60-2.00	0.08-0.13	3.0-5.9	1.0-3.0	.17	.17			
	9-17	82	12	3-12	1.60-1.70	5.95-19.98	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17			
	17-33	80	15	1-12	1.50-1.70	5.95-19.98	0.06-0.11	0.0-2.9	0.0-0.5	.17	.20			
	33-80	90	5	1-12	1.50-1.70	5.95-19.98	0.06-0.11	0.0-2.9	0.0-0.5	.17	.20			
	0-6	57	27	11-17	1.40-1.50	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20	5	3	86
	6-14	62	22	11-17	1.40-1.50	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20			
	14-19	66	19	11-17	1.40-1.60	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20			
	19-30	73	16	10-17	1.40-1.65	2.00-6.00	0.12-0.16	0.0-2.9	0.5-1.0	.20	.20			
	30-37	72	16	10-17	1.40-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.5-1.0	.20	.20			
	37-52	71	17	2-12	1.50-1.70	1.98-19.98	0.05-0.12	0.0-2.9	0.0-0.5	.17	.17			
	52-80	75	16	2-10	1.50-1.70	1.98-19.98	0.05-0.12	0.0-2.9	0.0-0.5	.17	.17			
2587: Imano-----	0-10	29	38	27-35	1.30-1.40	0.20-0.60	0.17-0.19	3.0-5.9	1.0-3.0	.28	.28	4	4L	86
	10-25	42	32	18-35	1.35-1.45	0.20-0.60	0.16-0.19	3.0-5.9	0.5-1.0	.28	.28			
	25-55	91	4	1-8	1.45-1.55	5.95-19.98	0.02-0.10	0.0-2.9	0.0-0.5	.15	.15			
	55-80	98	1	1-5	1.45-1.55	5.95-19.98	0.02-0.10	0.0-2.9	0.0-0.5	.15	.15			
2948: Nalim-----	0-6	49	36	14-27	1.45-1.65	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	5	56
	6-9	38	37	14-27	1.35-1.65	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28			
	9-13	33	32	25-35	1.40-1.65	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.5	.28	.28			
	13-21	38	30	25-35	1.40-1.80	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.2	.28	.28			
	21-31	45	30	25-35	1.40-1.85	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.0	.28	.28			
	31-39	54	23	10-35	1.40-1.70	0.20-0.60	0.10-0.20	3.0-5.9	0.2-0.8	.32	.28			
	39-44	70	12	10-35	1.40-1.70	0.20-0.60	0.10-0.20	3.0-5.9	0.2-0.5	.32	.28			
	44-52	74	10	5-35	1.45-1.70	0.20-0.60	0.06-0.20	3.0-5.9	0.1-0.5	.32	.32			
	52-62	82	8	4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	0.1-0.5	.17	.20			
	62-72	78	9	2-15	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	0.0-0.2	.15	.32			
	72-80	93	2	2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	0.0-0.2	.15	.32			
3052: Ost-----	0-8	35	44	10-27	1.40-1.54	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	8-12	32	41	20-35	1.35-1.45	0.20-0.60	0.15-0.19	3.0-5.9	1.0-2.0	.32	.32			
	12-18	32	41	20-35	1.35-1.45	0.20-0.60	0.15-0.19	3.0-5.9	1.0-2.0	.32	.32			
	18-23	23	48	18-35	1.40-1.52	0.20-0.60	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	23-38	26	47	5-30	1.40-1.65	0.20-0.60	0.13-0.19	0.0-2.9	0.0-0.6	.32	.37			
	38-54	33	44	5-30	1.40-1.65	0.20-0.60	0.13-0.19	0.0-2.9	0.0-0.5	.32	.37			
	54-80	44	35	5-30	1.40-1.65	0.20-0.60	0.13-0.19	0.0-2.9	0.0-0.5	.32	.37			
	0-11	37	41	15-27	1.35-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.28	.28	5	4L	86
	11-16	33	40	18-35	1.35-1.70	0.60-2.00	0.17-0.19	3.0-5.9	0.5-2.0	.32	.32			
	16-28	29	50	18-35	1.35-1.70	0.60-2.00	0.14-0.19	3.0-5.9	0.5-1.0	.32	.32			
	28-45	45	38	10-25	1.35-1.70	0.60-2.00	0.14-0.19	3.0-5.9	0.5-1.0	.32	.32			
	45-65	47	44	7-20	1.35-1.70	0.60-2.00	0.14-0.19	3.0-5.9	0.0-1.0	.32	.32			
	65-80	26	65	7-20	1.35-1.70	0.60-2.00	0.14-0.19	3.0-5.9	0.0-1.0	.32	.32			
3170: Penalosa----	0-5	22	57	15-28	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	5-10	21	57	15-28	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.43	.43			
	10-14	19	41	27-40	1.36-1.70	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.37	.37			
	14-22	19	44	27-45	1.40-1.70	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.37	.37			
	22-28	18	46	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	28-34	19	45	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	34-39	18	50	30-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	39-48	17	57	15-27	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	0.0-1.0	.43	.43			
	48-61	18	44	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.2-2.0	.37	.37			
	61-71	19	44	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.2-2.0	.37	.37			
	71-80	24	46	30-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.0-2.0	.37	.37			
3171: Penalosa----	0-5	22	57	15-28	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	5-10	21	57	15-26	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.43	.43			
	10-14	19	41	27-40	1.36-1.70	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.37	.37			
	14-22	19	44	27-37	1.40-1.70	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.37	.37			
	22-28	18	46	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	28-34	19	45	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	34-39	18	50	30-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
	39-48	17	57	15-27	1.30-1.50	0.60-2.00	0.16-0.24	0.0-2.9	0.0-1.0	.43	.43			
	48-61	18	44	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.2-2.0	.37	.37			
	61-71	19	44	35-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.2-2.0	.37	.37			
	71-80	24	46	30-50	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.0-2.0	.37	.37			

PHYSICAL PROPERTIES OF THE SOILS--Continued
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Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
3535: Shellabarger-	0-7	64	27	8-12	1.35-1.50	2.00-6.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	7-11	59	24	17-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-1.2	.28	.32			
	11-19	64	13	18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-0.5	.28	.32			
	19-33	69	8	18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	0.0-0.5	.28	.32			
	33-47	80	4	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	47-59	86	3	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	59-73	89	2	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
	73-80	90	3	3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	0.0-0.0	.28	.32			
Nalim-----	0-6	49	36	14-27	1.45-1.65	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	5	86
	6-9	38	37	14-27	1.35-1.65	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28			
	9-13	33	32	25-35	1.40-1.65	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.5	.28	.28			
	13-21	38	30	25-35	1.40-1.80	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.2	.28	.28			
	21-31	45	30	25-35	1.40-1.85	0.20-0.60	0.14-0.21	3.0-5.9	0.5-1.0	.28	.28			
	31-39	54	23	10-35	1.40-1.70	0.20-0.60	0.10-0.20	3.0-5.9	0.2-0.8	.32	.28			
	39-44	70	12	10-35	1.40-1.70	0.20-0.60	0.10-0.20	3.0-5.9	0.2-0.5	.32	.28			
	44-52	74	10	5-35	1.45-1.70	0.20-0.60	0.06-0.20	3.0-5.9	0.1-0.5	.32	.32			
	52-62	82	8	4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	0.1-0.5	.17	.20			
	62-72	78	9	2-15	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	0.0-0.2	.15	.32			
	72-80	93	2	2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	0.0-0.2	.15	.32			
3639: Taver-----	0-7	36	44	17-25	1.30-1.55	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	7-17	15	49	35-45	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	0.0-2.0	.37	.37			
	17-33	5	55	35-45	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	0.0-2.0	.37	.37			
	33-53	5	56	35-45	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	0.0-2.0	.37	.37			
	53-64	30	35	20-35	1.45-1.65	0.20-0.60	0.15-0.19	0.0-2.9	0.5-1.0	.28	.28			
	64-80	50	22	20-30	1.45-1.65	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.28	.28			
3966: Willowbrook--	0-4	62-75	20	8-18	1.45-1.80	2.00-6.00	0.16-0.18	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	4-9	62-75	21	8-18	1.45-1.80	2.00-6.00	0.16-0.18	0.0-2.9	1.0-2.0	.20	.20			
	9-13	64-78	20	5-15	1.50-1.80	2.00-6.00	0.16-0.19	0.0-2.9	0.5-1.0	.20	.20			
	13-17	50-78	20	5-15	1.50-1.80	2.00-6.00	0.16-0.19	0.0-2.9	0.5-1.0	.20	.20			
	17-19	50-76	38	5-15	1.50-1.80	2.00-6.00	0.13-0.17	0.0-2.9	0.2-1.0	.24	.24			
	19-26	50-76	21	5-15	1.50-1.80	2.00-6.00	0.13-0.17	0.0-2.9	0.2-1.0	.24	.24			
	26-45	88-100	3	0-5	1.60-1.80	6.00-19.99	0.02-0.07	0.0-2.9	0.0-0.5	.05	.05			
	45-51	86-100	1	0-1	1.60-1.80	6.00-19.99	0.02-0.05	0.0-2.9	0.0-0.1	.05	.05			
	51-80	86-100	1	0-1	1.60-1.80	6.00-19.99	0.02-0.05	0.0-2.9	0.0-0.0	.05	.05			
4004: Yaggy-----	0-5	54	38	5-12	1.50-1.60	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.20	.20	3	3	86
	5-11	69	24	5-12	1.50-1.60	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.20	.20			
	11-14	31	54	8-26	1.45-1.55	0.60-2.00	0.17-0.20	0.0-2.9	0.0-1.0	.24	.24			
	14-24	98	2	0-2	1.55-1.65	5.95-19.98	0.04-0.06	0.0-2.9	0.0-0.1	.05	.05			
	24-31	94	5	0-2	1.55-1.65	5.95-19.98	0.04-0.06	0.0-2.9	0.0-0.1	.05	.05			
	31-42	97	3	0-2	1.55-1.65	5.95-19.98	0.04-0.06	0.0-2.9	0.0-0.1	.05	.05			
	42-53	96	4	0-1	1.60-1.70	5.95-19.98	0.02-0.05	0.0-2.9	0.0-0.1	.05	.05			
	53-69	99	1	0-1	1.60-1.70	5.95-19.98	0.02-0.05	0.0-2.9	0.0-0.0	.05	.05			
	69-80	99	1	0-1	1.60-1.70	5.95-19.98	0.02-0.05	0.0-2.9	0.0-0.1	.05	.05			
Aa: Albion-----	0-9			7-15	1.35-1.50	2.00-6.00	0.13-0.17	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	9-19			10-18	1.45-1.60	2.00-6.00	0.12-0.18	0.0-2.9	---	.20	.24			
	19-26			4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	---	.17	.20			
	26-60			2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	---	.15	.32			
Shellabarger-	0-15			8-16	1.35-1.50	0.60-2.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	15-40			18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	---	.28	.32			
	40-60			3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	---	.28	.32			
Ab: Albion-----	0-9			7-15	1.35-1.50	2.00-6.00	0.13-0.17	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	9-19			10-18	1.45-1.60	2.00-6.00	0.12-0.18	0.0-2.9	---	.20	.24			
	19-26			4-15	1.45-1.60	2.00-6.00	0.09-0.12	0.0-2.9	---	.17	.20			
	26-60			2-10	1.50-1.65	5.95-19.98	0.03-0.10	0.0-2.9	---	.15	.32			
Shellabarger-	0-15			8-16	1.35-1.50	0.60-2.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	15-40			18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	---	.28	.32			
	40-60			3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	---	.28	.32			
AED: Arents, Earthen Dam-	---			---	---	---	---	---	---	---	---	-	---	---
Ba: Blanket-----	0-14			15-27	1.30-1.50	0.60-2.00	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	14-34			35-50	1.35-1.55	0.20-0.60	0.12-0.18	3.0-5.9	---	.43	.37			
	34-60			35-50	1.35-1.55	0.60-2.00	0.12-0.18	3.0-5.9	---	.43	.43			
Bb: Blanket-----	0-14			15-27	1.30-1.50	0.60-2.00	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	14-34			35-50	1.35-1.55	0.20-0.60	0.12-0.18	3.0-5.9	---	.43	.37			
	34-60			35-50	1.35-1.55	0.60-2.00	0.12-0.18	3.0-5.9	---	.43	.43			
BRR: Brewer-----	0-14	1-15	50-70	27-32	1.30-1.60	0.20-0.60	0.18-0.22	3.0-5.9	1.0-3.0	.37	.37	5	7	38
	14-66	1-25	40-55	35-55	1.40-1.70	0.06-0.20	0.12-0.22	6.0-8.9	0.5-2.0	.37	.37			
Ca: Canadian-----	0-20	62	26	5-18	1.30-1.60	2.00-6.00	0.10-0.15	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	20-35	66	20	10-18	1.40-1.70	2.00-6.00	0.10-0.20	0.0-2.9	---	.20	.20			
	35-60	62	26	5-18	1.40-1.70	1.98-19.98	0.07-0.20	0.0-2.9	---	.20	.20			

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Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Cb:														
Canadian-----	0-20	62	26	5-18	1.30-1.60	2.00-6.00	0.10-0.15	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	20-35	66	20	10-18	1.40-1.70	2.00-6.00	0.10-0.20	0.0-2.9	---	.20	.20			
	35-60	62	26	5-18	1.40-1.70	1.98-19.98	0.07-0.20	0.0-2.9	---	.20	.20			
Waldeck-----	0-14			8-16	1.50-1.60	2.00-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	14-27			8-16	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	---	.20	.20			
	27-60			1-4	1.55-1.65	5.95-19.98	0.05-0.07	0.0-2.9	---	.20	.24			
Cc:														
Carwile-----	0-18			5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	18-24			25-39	1.45-1.75	0.20-2.00	0.12-0.20	3.0-5.9	---	.37	.37			
	24-47			35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	---	.37	.37			
	47-60			20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	---	.32	.32			
Cd:														
Clark-----	0-11			27-32	1.35-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.28	.28	5	4L	86
	11-60			18-35	1.35-1.70	0.60-2.00	0.14-0.19	3.0-5.9	---	.28	.28			
Ost-----	0-7			27-30	1.35-1.40	0.20-0.60	0.15-0.20	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	7-15			20-34	1.45-1.65	0.20-0.60	0.15-0.20	3.0-5.9	---	.32	.32			
	15-19			18-34	1.40-1.60	0.20-0.60	0.15-0.20	3.0-5.9	---	.32	.32			
	19-60			5-30	1.40-1.60	0.20-0.60	0.13-0.20	0.0-2.9	---	.32	.37			
Ce:														
Clime-----	0-9	7	48	40-50	1.35-1.45	0.06-0.20	0.12-0.14	3.0-5.9	1.0-4.0	.28	.28	3	4	86
	9-27	6	47	35-60	1.35-1.50	0.06-0.20	0.12-0.18	3.0-5.9	1.0-4.0	.28	.28			
	27-34			---	---	---	---	---	---	---	---			
Ea:														
Elandco-----	0-40	10	68	18-27	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	40-60	9	64	18-35	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	---	.43	.43			
Eb:														
Elandco-----	0-40	10	68	18-27	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	40-60	9	64	18-35	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	---	.43	.43			
Ec:														
Elandco-----	0-40	10	68	18-27	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	40-60	9	64	18-35	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	---	.43	.43			
Fa:														
Farnum-----	0-14	42	38	14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	14-46	34	36	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	46-60	38	41	12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
Fb:														
Farnum-----	0-14			14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	14-46			25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	46-60			12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
Fc:														
Farnum-----	0-14			20-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	4	6	48
	14-28			27-35	1.35-1.45	0.20-0.60	0.14-0.21	3.0-5.9	---	.28	.28			
	28-40			12-29	1.40-1.50	0.60-2.00	0.13-0.19	0.0-2.9	---	.28	.28			
	40-60			2-8	1.40-1.55	5.95-19.98	0.02-0.10	0.0-2.9	---	.15	.15			
Ga:														
Goessel-----	0-5			40-55	1.30-1.40	0.00-0.06	0.12-0.16	6.0-8.9	1.0-4.0	.28	.28	5	4	86
	5-60			40-55	1.35-1.45	0.00-0.06	0.10-0.15	6.0-8.9	---	.28	.28			
Gb:														
Goessel-----	0-5			40-55	1.30-1.40	0.00-0.06	0.12-0.16	6.0-8.9	1.0-4.0	.28	.28	5	4	86
	5-60			40-55	1.35-1.45	0.00-0.06	0.10-0.15	6.0-8.9	---	.28	.28			
Ia:														
Irwin-----	0-13	20	48	28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32	5	7	38
	13-52	5	45	40-60	1.40-1.50	0.00-0.06	0.10-0.13	6.0-8.9	1.0-3.0	.28	.28			
	52-60	7	48	35-55	1.40-1.50	0.06-0.20	0.09-0.19	6.0-8.9	0.5-2.0	.32	.32			
Ib:														
Irwin-----	0-13			28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32	5	7	38
	13-52			40-60	1.40-1.50	0.00-0.06	0.10-0.13	6.0-8.9	1.0-3.0	.28	.28			
	52-60			35-55	1.40-1.50	0.06-0.20	0.09-0.19	6.0-8.9	0.5-2.0	.32	.32			
Ic:														
Irwin-----	0-6			28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32	5	7	38
	6-52			40-60	1.40-1.50	0.00-0.06	0.10-0.13	6.0-8.9	1.0-3.0	.28	.28			
	52-60			35-55	1.40-1.50	0.06-0.20	0.09-0.19	6.0-8.9	0.5-2.0	.32	.32			
INT:														
Aquolls-----	0-72			---	---	---	---	---	---	---	---	-	---	0
KAA:														
Kaski-----	0-24	40	38	18-27	1.35-1.45	0.60-2.00	0.18-0.22	3.0-5.9	1.0-3.0	.28	.28	5	6	48
	24-41	35	38	18-35	1.40-1.50	0.60-2.00	0.13-0.19	3.0-5.9	---	.28	.28			
	41-60	39	42	8-30	1.45-1.55	0.60-2.00	0.13-0.19	0.0-2.9	---	.28	.28			
La:														
Lesho-----	0-10			18-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	4	4L	86
	10-27			18-35	1.35-1.45	0.20-0.60	0.16-0.19	3.0-5.9	---	.28	.28			
	27-60			1-8	1.45-1.55	1.98-19.98	0.02-0.10	0.0-2.9	---	.15	.15			
Lb:														
Lincoln-----	0-8			10-18	1.30-1.60	5.95-19.98	0.10-0.15	0.0-2.9	0.0-1.0	.20	.20	5	3	86
	8-60			5-15	1.30-1.60	5.95-19.98	0.02-0.08	0.0-2.9	---	.17	.17			
M-W:														
Miscellaneous	---			---	---	---	---	---	---	---	---	-	---	---
Water-----														
Ma:														
Milan-----	0-11	42	38	14-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	11-60	34	36	25-35	1.40-1.55	0.20-0.60	0.14-0.21	3.0-5.9	---	.28	.28			

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(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Mb: Milan-----	0-11			14-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	11-60			25-35	1.40-1.55	0.20-0.60	0.14-0.21	3.0-5.9	----	.28	.28			
Mc: Milan-----	0-6			27-32	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	6-60			25-35	1.40-1.55	0.20-0.60	0.14-0.21	3.0-5.9	----	.28	.28			
Na: Naron-----	0-8			8-14	1.40-1.50	2.00-6.00	0.14-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	8-50			18-27	1.45-1.55	0.60-2.00	0.15-0.18	0.0-2.9	----	.32	.32			
	50-60			2-14	1.50-1.60	2.00-6.00	0.10-0.15	0.0-2.9	----	.32	.32			
Oc: Wellsford----	0-7			35-40	1.35-1.55	0.00-0.06	0.12-0.14	6.0-8.9	0.5-2.0	.32	.32	2	4	86
	7-15			35-60	1.45-1.65	0.00-0.06	0.10-0.12	6.0-8.9	----	.32	.32			
	15-20			----	----	----	----	----	----	----	----			
Od: Wellsford----	0-7			35-40	1.35-1.55	0.00-0.06	0.12-0.14	6.0-8.9	0.5-2.0	.32	.32	2	4	86
	7-15			35-60	1.45-1.65	0.00-0.06	0.10-0.12	6.0-8.9	----	.32	.32			
	15-20			----	----	----	----	----	----	----	----			
Rock Outcrop-	----			----	----	----	----	----	----	----	----			
Pa: Pits-----	----			----	----	----	----	----	----	----	----			
Pb: Plevna-----	0-9	67	20	8-18	1.40-1.50	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20	5	3	86
	9-35	67	20	8-18	1.40-1.50	2.00-6.00	0.12-0.16	0.0-2.9	----	.20	.20			
	35-60	95	1	1-7	1.50-1.60	6.00-19.99	0.05-0.07	0.0-2.9	----	.20	.20			
Pc: Pratt-----	0-18			2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	18-36			4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	----	.17	.17			
	36-60			1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	----	.17	.17			
Pd: Pratt-----	0-18			2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	18-36			4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	----	.17	.17			
	36-60			1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	----	.17	.17			
Tivoli-----	0-10			5-10	1.35-1.50	5.95-19.98	0.07-0.11	0.0-2.9	0.0-1.0	.17	.17	5	2	134
	10-60			1-10	1.50-1.70	5.95-19.98	0.02-0.08	0.0-2.9	----	.17	.17			
Ra: Renfrow-----	0-9	20	49	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	9-13	8	56	32-40	1.45-1.70	0.20-0.60	0.15-0.20	3.0-5.9	----	.43	.43			
	13-60	7	48	35-55	1.40-1.70	0.00-0.06	0.10-0.18	6.0-8.9	----	.43	.43			
Rb: Renfrow-----	0-9			27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	9-13			32-40	1.45-1.70	0.20-0.60	0.15-0.20	3.0-5.9	----	.43	.43			
	13-60			35-55	1.40-1.70	0.00-0.06	0.10-0.18	6.0-8.9	----	.43	.43			
Rc: Renfrow-----	0-9	35	34	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	9-13	8	56	32-40	1.45-1.70	0.20-0.60	0.15-0.20	3.0-5.9	----	.43	.43			
	13-60	7	48	35-55	1.40-1.70	0.00-0.06	0.10-0.18	6.0-8.9	----	.43	.43			
Wellsford----	0-7	30	32	35-40	1.35-1.55	0.00-0.06	0.12-0.14	6.0-8.9	0.5-2.0	.32	.32	2	4	86
	7-15	6	47	35-60	1.45-1.65	0.00-0.06	0.10-0.12	6.0-8.9	----	.32	.32			
	15-20			----	----	----	----	----	----	----	----			
Rd: Rosehill-----	0-8			40-60	1.20-1.35	0.00-0.06	0.12-0.14	6.0-8.9	1.0-3.0	.28	.28	3	4	86
	8-30			40-60	1.30-1.45	0.00-0.06	0.10-0.14	6.0-8.9	----	.28	.28			
	30-34			----	----	----	----	----	----	----	----			
Sa: Shellabarger-	0-15			8-16	1.35-1.50	0.60-2.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	15-40			18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	----	.28	.32			
	40-60			3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	----	.28	.32			
Sb: Shellabarger-	0-15			8-16	1.35-1.50	0.60-2.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	15-40			18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	----	.28	.32			
	40-60			3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	----	.28	.32			
Sc: Shellabarger-	0-15			8-16	1.35-1.50	0.60-2.00	0.13-0.21	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	15-40			18-27	1.45-1.60	0.60-2.00	0.16-0.18	0.0-2.9	----	.28	.32			
	40-60			3-18	1.50-1.65	0.60-2.00	0.05-0.16	0.0-2.9	----	.28	.32			
Ta: Tabler-----	0-9	20	49	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	9-32	6	47	40-55	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	----	.37	.37			
	32-60	7	48	35-55	1.35-1.65	0.00-0.06	0.12-0.22	6.0-8.9	----	.37	.37			
Tb: Tabler-----	0-9	27	54	12-27	1.30-1.55	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.49	.49	5	6	48
	9-32	6	47	40-55	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	----	.37	.37			
	32-60	7	48	35-55	1.35-1.65	0.00-0.06	0.12-0.22	6.0-8.9	----	.37	.37			
Drummond----	0-8	24	51	20-30	1.35-1.55	0.60-2.00	0.11-0.18	0.0-2.9	0.5-1.0	.49	.49	2	4L	48
	8-48	6	47	35-60	1.40-1.65	0.00-0.06	0.09-0.17	6.0-8.9	----	.55	.55			
	48-60			----	----	----	----	----	----	----	----			
Ua: Urban Land---	----			----	----	----	----	----	----	----	----			
Canadian-----	0-20	62	26	5-18	1.30-1.60	2.00-6.00	0.10-0.15	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	20-35	66	20	10-18	1.40-1.70	2.00-6.00	0.10-0.20	0.0-2.9	----	.20	.20			
	35-60	62	26	5-18	1.40-1.70	1.98-19.98	0.07-0.20	0.0-2.9	----	.20	.20			

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(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
Ub:	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Urban Land---	---			---	---	---	---	---	---	---	---	---	---	---
Elandco-----	0-40			18-27	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	40-60			18-35	1.30-1.50	0.60-2.00	0.15-0.22	3.0-5.9	---	.43	.43			
Uc:	---			---	---	---	---	---	---	---	---	---	---	---
Urban Land---	---			---	---	---	---	---	---	---	---	---	---	---
Farnum-----	0-14			14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	14-28			20-27	1.40-1.50	0.60-2.00	0.17-0.19	0.0-2.9	---	.28	.28			
	28-40			25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	40-60			12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
Ud:	---			---	---	---	---	---	---	---	---	---	---	---
Urban Land---	---			---	---	---	---	---	---	---	---	---	---	---
Irwin-----	0-13			28-35	1.35-1.45	0.20-0.60	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32	5	7	38
	13-52			40-60	1.40-1.50	0.00-0.06	0.10-0.13	6.0-8.9	1.0-3.0	.28	.28			
	52-60			35-55	1.40-1.50	0.06-0.20	0.09-0.19	6.0-8.9	0.5-2.0	.32	.32			
Ue:	---			---	---	---	---	---	---	---	---	---	---	---
Urban Land---	---			---	---	---	---	---	---	---	---	---	---	---
Tabler-----	0-9			27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	9-32			40-55	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	---	.37	.37			
	32-60			35-55	1.35-1.65	0.00-0.06	0.12-0.22	6.0-8.9	---	.37	.37			
Va:	---			---	---	---	---	---	---	---	---	---	---	---
Vanoss-----	0-13			15-26	1.30-1.50	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	13-16			18-30	1.40-1.70	0.60-2.00	0.15-0.24	3.0-5.9	---	.32	.32			
	16-60			27-35	1.45-1.70	0.60-2.00	0.15-0.22	3.0-5.9	---	.32	.32			
Vb:	---			---	---	---	---	---	---	---	---	---	---	---
Vanoss-----	0-13	11	68	15-26	1.30-1.50	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	13-16	8	68	18-30	1.40-1.70	0.60-2.00	0.15-0.24	3.0-5.9	---	.32	.32			
	16-60	7	62	27-35	1.45-1.70	0.60-2.00	0.15-0.22	3.0-5.9	---	.32	.32			
Vc:	---			---	---	---	---	---	---	---	---	---	---	---
Vanoss-----	0-13			15-26	1.30-1.50	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	13-16			18-30	1.40-1.70	0.60-2.00	0.15-0.24	3.0-5.9	---	.32	.32			
	16-60			27-35	1.45-1.70	0.60-2.00	0.15-0.22	3.0-5.9	---	.32	.32			
Vd:	---			---	---	---	---	---	---	---	---	---	---	---
Vanoss-----	0-7			15-26	1.30-1.50	0.60-2.00	0.15-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	7-16			18-30	1.40-1.70	0.60-2.00	0.15-0.24	3.0-5.9	---	.32	.32			
	16-60			27-35	1.45-1.70	0.60-2.00	0.15-0.22	3.0-5.9	---	.32	.32			
Ve:	---			---	---	---	---	---	---	---	---	---	---	---
Vernon-----	0-8			5-20	1.35-1.45	2.00-6.00	0.13-0.15	0.0-2.9	0.5-2.0	.20	.20	3	3	86
	8-13			20-40	1.40-1.60	0.20-0.60	0.12-0.18	6.0-8.9	---	.37	.37			
	13-28			40-60	1.50-1.65	0.00-0.06	0.10-0.15	6.0-8.9	---	.37	.37			
	28-60			40-60	1.60-1.75	0.00-0.06	0.00-0.10	6.0-8.9	---	.37	.37			
Vf:	---			---	---	---	---	---	---	---	---	---	---	---
Vernon-----	0-8			5-20	1.35-1.45	2.00-6.00	0.13-0.15	0.0-2.9	0.5-2.0	.20	.20	3	3	86
	8-13			20-40	1.40-1.60	0.20-0.60	0.12-0.18	6.0-8.9	---	.37	.37			
	13-28			40-60	1.50-1.65	0.00-0.06	0.10-0.15	6.0-8.9	---	.37	.37			
	28-60			40-60	1.60-1.75	0.00-0.06	0.00-0.10	6.0-8.9	---	.37	.37			
W:	---			---	---	---	---	---	---	---	---	---	---	---
Water-----	---			---	---	---	---	---	---	---	---	---	---	---
Wa:	---			---	---	---	---	---	---	---	---	---	---	---
Waldeck-----	0-14			8-16	1.50-1.60	2.00-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	14-27			8-16	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	---	.20	.32			
	27-60			1-4	1.55-1.65	5.95-19.98	0.05-0.07	0.0-2.9	---	.20	.32			
Wb:	---			---	---	---	---	---	---	---	---	---	---	---
Waurika-----	0-15			15-25	1.30-1.50	0.60-2.00	0.16-0.20	0.0-2.9	1.0-3.0	.49	.49	5	6	48
	15-40			40-60	1.35-1.60	0.00-0.06	0.10-0.17	6.0-8.9	---	.37	.37			
	40-53			30-50	1.40-1.70	0.06-0.20	0.10-0.19	6.0-8.9	---	.37	.37			
	53-60			27-39	1.45-1.70	0.06-0.20	0.15-0.19	3.0-5.9	---	.43	.43			

CHEMICAL PROPERTIES OF THE SOILS
Sedgwick County, Kansas

The Chemical Properties table shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

CHEMICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
015LS: Ladysmith-----	0-7	---	---	5.6-7.3	---	---	---	---
	7-15	---	---	---	---	---	---	---
	15-30	---	---	5.6-7.8	---	---	---	---
	30-38	---	---	5.6-7.8	---	---	---	---
	38-60	---	---	7.4-8.4	---	---	---	---
079CR: Crete-----	0-5	16-23	---	5.6-6.0	0	0	0	0
	5-9	20-28	---	5.6-6.0	0	0	0	0
	9-19	25-41	---	6.1-7.3	0	0	0	0
	19-27	25-41	---	6.1-7.3	0	0	0	0
	27-38	25-41	---	6.1-7.3	0	0	0	0
	38-48	18-29	---	7.4-8.4	0-5	0	0	0
	48-80	18-29	---	7.4-8.4	0-5	0	0	0
079CT: Crete-----	0-5	16-23	---	5.6-6.0	0	0	0	0
	5-9	20-28	---	5.6-6.0	0	0	0	0
	9-19	25-41	---	6.1-7.3	0	0	0	0
	19-27	25-41	---	6.1-7.3	0	0	0	0
	27-38	25-41	---	6.1-7.3	0	0	0	0
	38-48	18-29	---	7.4-8.4	0-5	0	0	0
	48-80	18-29	---	7.4-8.4	0-5	0	0	0
079DE: Detroit-----	0-11	12-24	---	6.1-7.3	0	0	0	0
	11-36	14-27	---	6.6-7.8	0	0	0	0
	36-60	7.0-21	---	6.6-8.4	---	0	0	---
079DU: Drummond-----	0-9	8.0-19	---	7.4-8.4	---	---	4.0-16.0	---
	9-60	14-36	---	7.9-9.0	---	---	4.0-16.0	---
079FA: Farnum-----	0-14	3.0-10	---	5.6-7.3	---	---	---	---
	14-45	10-21	---	6.1-8.4	---	---	---	---
	45-60	4.0-18	---	6.6-8.4	---	---	---	---
079FE: Farnum-----	0-11	6.0-18	---	5.6-7.3	---	---	---	---
	11-45	10-21	---	6.1-8.4	---	---	---	---
	45-60	4.0-18	---	6.6-8.4	---	---	---	---
079GD: Geary-----	0-9	6.0-19	---	5.6-6.5	0	0	0	0
	9-35	10-21	---	5.6-7.8	0	0	0	0
	35-60	8.0-19	---	6.1-8.4	0	0	0	0
079KA: Kaski-----	0-24	7.0-18	---	5.6-7.3	---	---	---	---
	24-41	7.0-21	---	5.6-7.8	---	---	---	---
	41-60	3.0-18	---	5.6-8.4	---	---	---	---
079LA: Ladysmith-----	0-10	12-24	---	5.6-7.3	---	---	---	---
	10-45	16-36	---	5.6-7.8	0-5	---	---	---
	45-60	14-33	---	7.4-8.4	0-5	---	---	---
079LB: Ladysmith-----	0-10	12-24	---	5.6-7.3	---	---	---	---
	10-45	16-36	---	5.6-7.8	0-5	---	---	---
	45-60	14-33	---	7.4-8.4	0-5	---	---	---
079SM: Smolan-----	0-8	11-24	---	5.6-7.3	0	0	0	0
	8-15	11-24	---	5.6-7.3	0	0	0	0
	15-40	14-30	---	5.6-7.8	0	0	0	0
	40-60	10-21	---	6.6-7.8	0-5	0	0	0
095AD: Albion-----	0-8	3.0-10	---	5.6-6.5	0	0	0	0
	8-16	4.0-11	---	6.1-7.8	0	0	0	0
	16-26	1.0-9.0	---	6.1-8.4	0	0	0	0
	26-60	0.0-6.0	---	6.1-8.4	0	0	0	0
095LA: Lincoln-----	0-10	2.0-9.0	---	7.4-8.4	---	---	---	---
	10-60	2.0-9.0	---	7.9-8.4	1-5	---	---	---
095WA: Waldeck-----	0-25	3.0-11	---	7.4-8.4	---	---	---	---
	25-42	3.0-10	---	7.4-8.4	---	---	---	---
	42-60	0.0-3.0	---	7.4-8.4	---	---	---	---
191BA: Bethany-----	0-6	6.0-18	---	6.1-7.8	0	0	0	0
	6-17	14-30	---	6.1-8.4	---	0	0	0
	17-60	14-30	---	7.9-8.4	0-5	0	0	0
191BB: Bethany-----	0-6	6.0-18	---	6.1-7.8	0	0	0	0
	6-17	14-30	---	6.1-8.4	---	0	0	0
	17-60	14-30	---	7.9-8.4	0-5	0	0	0
191DR: Dale-----	0-21	6.0-18	---	6.1-7.8	0	0	0	0
	21-60	7.0-21	---	7.4-8.4	---	0	0	0
	Reinach-----	0-80	---	6.1-8.4	---	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
191EA: Elandco-----	0-40	7.0-18	---	6.6-8.4	---	0	---	0
	40-60	7.0-21	---	7.4-8.4	---	0	---	0
191LO: Lesho-----	0-18	11-23	---	7.4-8.4	---	---	0.0-4.0	---
	18-32	7.0-21	---	7.4-8.4	---	---	0.0-4.0	---
	32-60	0.0-5.0	---	7.4-9.0	---	---	0.0-4.0	---
1011: Albion-----	0-9	5.0-15	---	5.6-6.5	0	0	0	0
	9-16	5.0-15	---	6.1-7.8	0	0	0	0
	16-27	5.0-15	---	6.1-7.8	0	0	0	0
	27-48	2.0-10	---	6.1-8.4	0	0	0	0
	48-80	2.0-5.0	---	6.1-8.4	0	0	0	0
Shellabarger----	0-7	6.0-10	---	5.1-6.5	0	0	0	0
	7-11	9.0-12	---	6.1-7.8	0	0	0	0
	11-19	9.0-12	---	6.1-7.8	0	0	0	0
	19-33	9.0-12	---	6.1-7.8	0	0	0	0
	33-47	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	47-59	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	59-73	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	73-80	2.0-9.0	---	6.1-8.4	0-5	0	0	0
1070: Avans-----	0-5	9.0-15	---	5.1-6.0	0	0	0	0
	5-10	9.0-15	---	5.1-6.0	0	0	0	0
	10-14	7.0-15	---	5.1-6.0	0	0	0	0
	14-19	15-25	---	5.6-7.3	0	0	0	0
	19-30	15-25	---	5.6-7.3	0	0	0	0
	30-43	11-15	---	5.6-7.3	0	0	0	0
	43-53	11-15	---	5.6-7.3	0	0	0	0
	53-65	11-15	---	5.6-7.8	0-3	0	0	0
	65-80	11-15	---	5.6-7.8	0-3	0	0	0
1071: Avans-----	0-5	9.0-15	---	5.1-6.0	0	0	0	0
	5-10	9.0-15	---	5.1-6.0	0	0	0	0
	10-14	7.0-15	---	5.1-6.0	0	0	0	0
	14-19	15-25	---	5.6-7.3	0	0	0	0
	19-30	15-25	---	5.6-7.3	0	0	0	0
	30-43	11-15	---	5.6-7.3	0	0	0	0
	43-53	11-15	---	5.6-7.3	0	0	0	0
	53-65	11-15	---	5.6-7.8	0-3	0	0	0
	65-80	11-15	---	5.6-7.8	0-3	0	0	0
1072: Avans-----	0-5	9.0-15	---	5.1-6.0	0	0	0	0
	5-10	9.0-15	---	5.1-6.0	0	0	0	0
	10-14	7.0-15	---	5.1-6.0	0	0	0	0
	14-19	15-25	---	5.6-7.3	0	0	0	0
	19-30	15-25	---	5.6-7.3	0	0	0	0
	30-43	11-15	---	5.6-7.3	0	0	0	0
	43-53	11-15	---	5.6-7.3	0	0	0	0
	53-65	11-15	---	5.6-7.8	0-3	0	0	0
	65-80	11-15	---	5.6-7.8	0-3	0	0	0
2204: Jamash-----	0-4	16-21	---	6.1-7.8	0	0	0	0
	4-11	19-24	---	6.6-8.4	0	0	0	0
	11-15	15-27	---	7.4-8.4	0-2	0	0	0
	15-28	10-20	---	7.4-9.0	15-25	0	0	0
	28-80	10-20	---	7.4-9.0	15-25	0	0	0
Piedmont-----	0-4	16-21	---	6.1-7.3	0	0	0	0
	4-7	16-21	---	6.1-7.3	0	0	0	0
	7-13	19-24	---	6.1-7.8	0	0	0	0
	13-20	19-24	---	6.1-7.8	0	0	0	0
	20-24	21-33	---	6.6-8.4	0-2	0	0	0
	24-32	21-33	---	7.9-8.4	0-5	0	0	0
	32-80	10-20	---	7.4-9.0	15-25	0	0	0
2205: Jamash-----	0-4	16-21	---	6.1-7.8	0	0	0	0
	4-11	19-24	---	6.6-8.4	0	0	0	0
	11-15	15-27	---	7.4-8.4	0-2	0	0	0
	15-28	10-20	---	7.4-9.0	15-25	0	0	0
	28-80	10-20	---	7.4-9.0	15-25	0	0	0
Piedmont-----	0-4	16-21	---	6.1-7.3	0	0	0	0
	4-7	16-21	---	6.1-7.3	0	0	0	0
	7-13	19-24	---	6.1-7.8	0	0	0	0
	13-20	19-24	---	6.1-7.8	0	0	0	0
	20-24	21-33	---	6.6-8.4	0-2	0	0	0
	24-32	21-33	---	7.9-8.4	0-5	0	0	0
	32-80	10-20	---	7.4-9.0	15-25	0	0	0
2207: Jamash-----	0-4	16-21	---	6.1-7.8	0	0	0	0
	4-11	19-24	---	6.6-8.4	0	0	0	0
	11-15	15-27	---	7.4-8.4	0-2	0	0	0
	15-28	10-20	---	7.4-9.0	15-25	0	0	0
	28-80	10-20	---	7.4-9.0	15-25	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
2381: Kanza-----	0-4	2.0-10	---	5.6-6.5	0	0	0	0
	4-9	2.0-10	---	5.6-6.5	0	0	0	0
	9-17	2.0-5.0	---	5.6-6.5	0	0	0	0
	17-33	2.0-5.0	---	5.6-8.4	0-5	0	0	0
	33-80	2.0-5.0	---	5.6-8.4	0-5	0	0	0
Ninnescah-----	0-6	5.0-12	---	7.4-8.4	5-14	0	0.0-2.1	0-1
	6-14	5.0-12	---	7.4-8.4	5-14	0	0.0-2.0	0-1
	14-19	5.0-12	---	7.4-8.4	5-14	0	0.0-2.0	0-1
	19-30	5.0-8.0	---	7.4-8.4	5-11	0	0.0-1.0	0-1
	30-37	5.0-8.0	---	7.4-8.4	5-11	0	0.0-1.0	0-1
	37-52	3.0-8.0	---	6.6-8.4	0-10	0	0.0-1.0	0-1
	52-80	3.0-8.0	---	6.6-8.4	0-10	0	0.0-1.0	0-1
2587: Imano-----	0-10	15-25	---	7.4-8.4	1-5	0	0	0
	10-25	10-25	---	7.4-8.4	1-5	0	0	0
	25-55	1.0-5.0	---	7.4-9.0	1-5	0	0	0
	55-80	1.0-5.0	---	7.4-9.0	1-5	0	0	0
2948: Nalim-----	0-6	9.0-15	---	5.6-7.3	0	0	0	0
	6-9	9.0-20	---	5.6-7.3	0	0	0	0
	9-13	15-25	---	5.6-8.4	0	0	0	0
	13-21	15-24	---	5.6-8.4	0	0	0	0
	21-31	15-20	---	5.6-8.4	0	0	0	0
	31-39	7.0-20	---	5.6-8.4	0	0	0	0
	39-44	7.0-20	---	5.6-8.4	0	0	0	0
	44-52	3.0-20	---	5.6-8.4	0	0	0	0
	52-62	2.0-10	---	5.6-7.3	0	0	0	0
	62-72	2.0-10	---	5.6-7.3	0	0	0	0
	72-80	2.0-5.0	---	5.6-7.3	0	0	0	0
3052: Ost-----	0-8	15-20	---	6.1-8.4	0	0	0	0
	8-12	10-25	---	6.6-8.4	0	0	0	0
	12-18	10-25	---	6.6-8.4	0	0	0	0
	18-23	10-25	---	7.4-8.4	15-34	0	0	0
	23-38	5.0-15	---	7.4-8.4	15-30	0	0	0
	38-54	5.0-15	---	7.4-8.4	15-30	0	0	0
	54-80	5.0-17	---	7.4-8.4	15-30	0	0	0
Clark-----	0-11	10-25	---	7.4-8.4	0-5	0	0	0
	11-16	10-25	---	7.4-9.0	5-25	0	0	0
	16-28	10-25	---	7.4-9.0	0-25	0	0	0
	28-45	10-25	---	7.4-9.0	15-45	0	0	0
	45-65	5.0-20	---	7.4-9.0	15-25	0	0	0
	65-80	5.0-20	---	7.4-9.0	15-25	0	0	0
3170: Penalosa-----	0-5	10-16	---	5.1-7.3	0	0	0	0
	5-10	10-16	---	5.1-7.3	0	0	0	0
	10-14	17-21	---	6.1-8.4	0	0	0	0
	14-22	17-21	---	6.1-8.4	0	0	0	0
	22-28	21-30	---	6.6-8.4	0-2	0	0	0
	28-34	21-30	---	6.6-8.4	0-2	0	0	0
	34-39	21-30	---	6.6-8.4	0-2	0	0	0
	39-48	10-16	---	6.6-8.4	0	0	0	0
	48-61	21-30	---	6.6-8.4	0-10	0	0	0
	61-71	21-30	---	6.6-8.4	0-10	0	0	0
	71-80	21-30	---	6.6-8.4	0-10	0	0	0
3171: Penalosa-----	0-5	10-16	---	5.1-7.3	0	0	0	0
	5-10	10-16	---	5.1-7.3	0	0	0	0
	10-14	17-21	---	6.1-8.4	0	0	0	0
	14-22	17-21	---	6.1-8.4	0	0	0	0
	22-28	21-30	---	6.6-8.4	0-2	0	0	0
	28-34	21-30	---	6.6-8.4	0-2	0	0	0
	34-39	21-30	---	6.6-8.4	0-2	0	0	0
	39-48	10-16	---	6.6-8.4	0	0	0	0
	48-61	21-30	---	6.6-8.4	0-10	0	0	0
	61-71	21-30	---	6.6-8.4	0-10	0	0	0
	71-80	21-30	---	6.6-8.4	0-10	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
3535: Shellabarger----	0-7	6.0-10	---	5.1-6.5	0	0	0	0
	7-11	9.0-12	---	6.1-7.8	0	0	0	0
	11-19	9.0-12	---	6.1-7.8	0	0	0	0
	19-33	9.0-12	---	6.1-7.8	0	0	0	0
	33-47	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	47-59	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	59-73	2.0-9.0	---	6.1-8.4	0-5	0	0	0
	73-80	2.0-9.0	---	6.1-8.4	0-5	0	0	0
Nalim-----	0-6	9.0-15	---	5.6-7.3	0	0	0	0
	6-9	9.0-20	---	5.6-7.3	0	0	0	0
	9-13	15-25	---	5.6-8.4	0	0	0	0
	13-21	15-24	---	5.6-8.4	0	0	0	0
	21-31	15-20	---	5.6-8.4	0	0	0	0
	31-39	7.0-20	---	5.6-8.4	0	0	0	0
	39-44	7.0-20	---	5.6-8.4	0	0	0	0
	44-52	3.0-20	---	5.6-8.4	0	0	0	0
	52-62	2.0-10	---	5.6-7.3	0	0	0	0
	62-72	2.0-10	---	5.6-7.3	0	0	0	0
	72-80	2.0-5.0	---	5.6-7.3	0	0	0	0
3639: Taver-----	0-7	10-15	---	6.1-7.3	0	0	0	0
	7-17	30-40	---	6.6-8.4	0-5	0	0	0
	17-33	30-40	---	6.6-8.4	0-5	0	0	0
	33-53	30-40	---	6.6-8.4	0-5	0	0	0
	53-64	12-17	---	7.4-8.4	0-5	0	0	0
	64-80	12-17	---	7.4-8.4	0-5	0	0	0
3966: Willowbrook----	0-4	5.0-11	---	5.6-8.4	0	0	0	0
	4-9	5.0-11	---	5.6-8.4	0	0	0	0
	9-13	5.0-11	---	5.6-8.4	0	0	0	0
	13-17	5.0-11	---	5.6-8.4	0	0	0	0
	17-19	3.0-10	---	7.4-8.4	0-5	0	0	0
	19-26	3.0-10	---	7.4-8.4	0-5	0	0	0
	26-45	0.0-3.0	---	7.4-8.4	0	0	0	0
	45-51	0.0-2.0	---	7.4-8.4	0	0	0	0
	51-80	0.0-2.0	---	7.4-8.4	0	0	0	0
4004: Yaggy-----	0-5	6.0-9.0	---	7.4-8.4	0-3	0	0	0
	5-11	6.0-9.0	---	7.4-8.4	0-3	0	0	0
	11-14	5.0-16	---	7.4-8.4	0-5	0	0	0
	14-24	---	---	7.4-8.4	0	0	0	0
	24-31	---	---	7.4-8.4	0	0	0	0
	31-42	---	---	7.4-8.4	0	0	0	0
	42-53	---	---	7.4-8.4	0	0	0	0
	53-69	---	---	7.4-8.4	0	0	0	0
	69-80	---	---	7.4-8.4	0	0	0	0
Aa:								
Albion-----	0-9	3.0-10	---	5.6-6.5	0	0	0	0
	9-19	4.0-11	---	6.1-7.8	0	0	0	0
	19-26	1.0-9.0	---	6.1-8.4	0	0	0	0
	26-60	0.0-6.0	---	6.1-8.4	0	0	0	0
Shellabarger----	0-15	3.0-11	---	5.1-6.5	---	---	---	---
	15-40	7.0-16	---	6.1-7.8	---	---	---	---
	40-60	1.0-11	---	6.1-8.4	---	---	---	---
Ab:								
Albion-----	0-9	3.0-10	---	5.6-6.5	0	0	0	0
	9-19	4.0-11	---	6.1-7.8	0	0	0	0
	19-26	1.0-9.0	---	6.1-8.4	0	0	0	0
	26-60	0.0-6.0	---	6.1-8.4	0	0	0	0
Shellabarger----	0-15	3.0-11	---	5.1-6.5	---	---	---	---
	15-40	7.0-16	---	6.1-7.8	---	---	---	---
	40-60	1.0-11	---	6.1-8.4	---	---	---	---
AED:								
Arents, Earthen Dam-----	---	---	---	---	---	---	---	---
Ba:								
Blanket-----	0-14	6.0-18	---	6.1-7.8	0	0	0	0
	14-34	14-30	---	6.1-8.4	---	0	0	0
	34-60	14-30	---	7.9-8.4	---	0	0	0
Bb:								
Blanket-----	0-14	6.0-18	---	6.1-7.8	0	0	0	0
	14-34	14-30	---	6.1-8.4	---	0	0	0
	34-60	14-30	---	7.9-8.4	---	0	0	0
BRR:								
Brewer-----	0-14	11-21	---	5.6-7.3	0	0	0	0
	14-66	14-33	---	6.1-8.4	0	0	0	0
Ca:								
Canadian-----	0-20	2.0-13	---	5.6-7.3	0	0	0	0
	20-35	4.0-11	---	6.1-8.4	0	0	0	0
	35-60	2.0-11	---	6.1-8.4	0	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
Cb:								
Canadian-----	0-20	2.0-13	---	5.6-7.3	0	0	0	0
	20-35	4.0-11	---	6.1-8.4	0	0	0	0
	35-60	2.0-11	---	6.1-8.4	0	0	0	0
Waldeck-----	0-14	3.0-11	---	7.4-8.4	---	---	---	---
	14-27	3.0-10	---	7.4-8.4	---	---	---	---
	27-60	0.0-3.0	---	7.4-8.4	---	---	---	---
Cc:								
Carwile-----	0-18	2.0-13	---	5.1-7.3	---	---	---	---
	18-24	10-24	---	5.1-7.3	---	---	---	---
	24-47	14-36	---	6.1-8.4	---	---	---	---
	47-60	8.0-27	---	6.6-8.4	---	---	---	---
Cd:								
Clark-----	0-11	11-21	---	7.4-8.4	0-5	---	---	---
	11-60	7.0-21	---	7.4-8.4	15-45	---	---	---
Ost-----	0-7	11-20	---	6.1-8.4	---	---	---	---
	7-15	8.0-21	---	6.6-8.4	---	---	---	---
	15-19	7.0-21	---	7.4-8.4	15-34	---	---	---
	19-60	2.0-18	---	7.4-8.4	15-34	---	---	---
Ce:								
Clime-----	0-9	16-33	---	6.6-8.4	5-10	---	---	---
	9-27	14-39	---	7.4-8.4	5-10	---	---	---
	27-34	---	0.0-0.0	---	---	---	---	---
Ea:								
Elandco-----	0-40	7.0-18	---	6.6-8.4	---	0	---	0
	40-60	7.0-21	---	7.4-8.4	---	0	---	0
Eb:								
Elandco-----	0-40	7.0-18	---	6.6-8.4	---	0	---	0
	40-60	7.0-21	---	7.4-8.4	---	0	---	0
Ec:								
Elandco-----	0-40	7.0-18	---	6.6-8.4	---	0	---	0
	40-60	7.0-21	---	7.4-8.4	---	0	---	0
Fa:								
Farnum-----	0-14	6.0-18	---	5.6-7.3	---	---	---	---
	14-46	10-21	---	6.1-8.4	---	---	---	---
	46-60	4.0-18	---	6.6-8.4	---	---	---	---
Fb:								
Farnum-----	0-14	6.0-18	---	5.6-7.3	---	---	---	---
	14-46	10-21	---	6.1-8.4	---	---	---	---
	46-60	4.0-18	---	6.6-8.4	---	---	---	---
Fc:								
Farnum-----	0-14	8.0-18	---	5.6-7.3	---	---	---	---
	14-28	10-21	---	5.6-7.8	---	---	---	---
	28-40	4.0-18	---	6.1-7.8	---	---	---	---
	40-60	0.0-5.0	---	6.6-8.4	---	---	---	---
Ga:								
Goessel-----	0-5	16-36	---	6.1-7.3	---	---	---	---
	5-60	16-33	---	7.4-8.4	0-5	---	---	---
Gb:								
Goessel-----	0-5	16-36	---	6.1-7.3	---	---	---	---
	5-60	16-33	---	7.4-8.4	0-5	---	---	---
Ia:								
Irwin-----	0-13	12-24	---	5.6-7.3	---	---	---	---
	13-52	16-38	---	5.6-8.4	---	---	---	---
	52-60	14-34	---	6.6-8.4	---	---	---	---
Ib:								
Irwin-----	0-13	12-24	---	5.6-7.3	---	---	---	---
	13-52	16-38	---	5.6-8.4	---	---	---	---
	52-60	14-34	---	6.6-8.4	---	---	---	---
Ic:								
Irwin-----	0-6	12-24	---	5.6-7.3	---	---	---	---
	6-52	16-38	---	5.6-8.4	---	---	---	---
	52-60	14-34	---	6.6-8.4	---	---	---	---
INT:								
Aquolls-----	0-72	---	---	---	---	---	---	---
KAA:								
Kaski-----	0-24	7.0-18	---	5.6-7.3	---	---	---	---
	24-41	7.0-21	---	5.6-7.8	---	---	---	---
	41-60	3.0-18	---	5.6-8.4	---	---	---	---
La:								
Lesho-----	0-10	7.0-18	---	7.4-8.4	---	---	0.0-4.0	---
	10-27	7.0-21	---	7.4-8.4	---	---	0.0-4.0	---
	27-60	0.0-5.0	---	7.4-9.0	---	---	0.0-4.0	---
Lb:								
Lincoln-----	0-8	4.0-11	---	7.4-8.4	---	---	---	---
	8-60	2.0-9.0	---	7.9-8.4	---	---	---	---
M-W:								
Miscellaneous	---	---	---	---	---	---	---	---
Water-----								
Ma:								
Milan-----	0-11	6.0-18	---	5.6-6.5	---	---	---	---
	11-60	10-21	---	5.6-7.3	0-5	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
Mb: Milan-----	0-11	6.0-18	---	5.6-6.5	---	---	---	---
	11-60	10-21	---	5.6-7.3	0-5	---	---	---
Mc: Milan-----	0-6	11-21	---	5.6-6.5	---	---	---	---
	6-60	10-21	---	5.6-7.3	0-5	---	---	---
Na: Naron-----	0-8	3.0-10	---	5.6-7.3	---	---	---	---
	8-50	7.0-16	---	5.6-7.8	---	---	---	---
	50-60	0.0-9.0	---	6.1-8.4	---	---	---	---
Oc: Wellsford-----	0-7	14-25	---	6.6-8.4	---	---	0.0-2.0	---
	7-15	14-36	---	7.9-8.4	---	---	0.0-2.0	---
	15-20	---	0.0-0.0	---	---	---	---	---
Od: Wellsford-----	0-7	14-25	---	6.6-8.4	---	---	0.0-2.0	---
	7-15	14-36	---	7.9-8.4	---	---	0.0-2.0	---
	15-20	---	0.0-0.0	---	---	---	---	---
Rock Outcrop----	---	---	---	---	---	---	---	---
Pa: Pits-----	---	---	---	---	---	---	---	---
Pb: Plevna-----	0-9	3.0-13	---	6.6-8.4	0	0	0	0
	9-35	3.0-11	---	6.6-8.4	0	0	0	0
	35-60	0.0-4.0	---	6.6-8.4	0	0	0	0
Pc: Pratt-----	0-18	1.0-5.0	---	5.6-7.3	---	---	---	---
	18-36	1.0-7.0	---	5.6-7.3	---	---	---	---
	36-60	0.0-5.0	---	6.1-7.3	---	---	---	---
Pd: Pratt-----	0-18	1.0-5.0	---	5.6-7.3	---	---	---	---
	18-36	1.0-7.0	---	5.6-7.3	---	---	---	---
	36-60	0.0-5.0	---	6.1-7.3	---	---	---	---
	0-10	2.0-7.0	---	6.1-7.8	---	---	---	---
	10-60	0.0-6.0	---	6.1-8.4	---	---	---	---
Ra: Renfrow-----	0-9	11-23	---	6.1-7.8	0	0	0	0
	9-13	12-24	---	6.1-7.8	0	0	0	0
	13-60	14-33	---	6.1-8.4	0	0	0	0
Rb: Renfrow-----	0-9	11-23	---	6.1-7.8	0	0	0	0
	9-13	12-24	---	6.1-7.8	0	0	0	0
	13-60	14-33	---	6.1-8.4	0	0	0	0
Rc: Renfrow-----	0-9	11-23	---	6.1-7.8	0	0	0	0
	9-13	12-24	---	6.1-7.8	0	0	0	0
	13-60	14-33	---	6.1-8.4	0	0	0	0
	0-7	14-25	---	6.6-8.4	---	---	0.0-2.0	---
	7-15	14-36	---	7.9-8.4	---	---	0.0-2.0	---
	15-20	---	0.0-0.0	---	---	---	---	---
Rd: Rosehill-----	0-8	16-38	---	6.1-7.3	---	---	---	---
	8-30	16-36	---	6.6-8.4	---	---	---	---
	30-34	---	0.0-0.0	---	---	---	---	---
Sa: Shellabarger----	0-15	3.0-11	---	5.1-6.5	---	---	---	---
	15-40	7.0-16	---	6.1-7.8	---	---	---	---
	40-60	1.0-11	---	6.1-8.4	---	---	---	---
Sb: Shellabarger----	0-15	3.0-11	---	5.1-6.5	---	---	---	---
	15-40	7.0-16	---	6.1-7.8	---	---	---	---
	40-60	1.0-11	---	6.1-8.4	---	---	---	---
Sc: Shellabarger----	0-15	3.0-11	---	5.1-6.5	---	---	---	---
	15-40	7.0-16	---	6.1-7.8	---	---	---	---
	40-60	1.0-11	---	6.1-8.4	---	---	---	---
Ta: Tabler-----	0-9	11-23	---	5.6-8.4	0	0	0	0
	9-32	16-33	---	6.1-8.4	0	0	0	0
	32-60	14-33	---	7.4-8.4	0	0	0	0
Tb: Tabler-----	0-9	5.0-18	---	5.6-8.4	0	0	0	0
	9-32	16-33	---	6.1-8.4	0	0	0	0
	32-60	14-33	---	7.4-8.4	0	0	0	0
	0-8	8.0-19	---	6.1-8.4	---	---	0.0-4.0	---
	8-48	14-36	---	7.4-9.0	---	---	2.0-8.0	---
	48-60	---	0.0-0.0	---	---	---	---	---
Ua: Urban Land-----	---	---	---	---	---	---	---	---
Canadian-----	0-20	2.0-13	---	5.6-7.3	0	0	0	0
	20-35	4.0-11	---	6.1-8.4	0	0	0	0
	35-60	2.0-11	---	6.1-8.4	0	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
Ub:								
Urban Land-----	---	---	---	---	---	---	---	---
Elandco-----	0-40	7.0-18	---	6.6-8.4	---	0	---	0
	40-60	7.0-21	---	7.4-8.4	---	0	---	0
Uc:								
Urban Land-----	---	---	---	---	---	---	---	---
Farnum-----	0-14	6.0-18	---	5.6-7.3	---	---	---	---
	14-28	8.0-16	---	6.1-7.8	---	---	---	---
	28-40	10-21	---	6.1-8.4	---	---	---	---
	40-60	4.0-18	---	6.6-8.4	---	---	---	---
Ud:								
Urban Land-----	---	---	---	---	---	---	---	---
Irwin-----	0-13	12-24	---	5.6-7.3	---	---	---	---
	13-52	16-38	---	5.6-8.4	---	---	---	---
	52-60	14-34	---	6.6-8.4	---	---	---	---
Ue:								
Urban Land-----	---	---	---	---	---	---	---	---
Tabler-----	0-9	11-23	---	5.6-8.4	0	0	0	0
	9-32	16-33	---	6.1-8.4	0	0	0	0
	32-60	14-33	---	7.4-8.4	0	0	0	0
Va:								
Vanoss-----	0-13	6.0-18	---	5.1-7.3	0	0	0	0
	13-16	7.0-18	---	5.1-7.3	0	0	0	0
	16-60	10-21	---	5.1-7.3	0	0	0	0
Vb:								
Vanoss-----	0-13	6.0-18	---	5.1-7.3	0	0	0	0
	13-16	7.0-18	---	5.1-7.3	0	0	0	0
	16-60	10-21	---	5.1-7.3	0	0	0	0
Vc:								
Vanoss-----	0-13	6.0-18	---	5.1-7.3	0	0	0	0
	13-16	7.0-18	---	5.1-7.3	0	0	0	0
	16-60	10-21	---	5.1-7.3	0	0	0	0
Vd:								
Vanoss-----	0-7	6.0-18	---	5.1-7.3	0	0	0	0
	7-16	7.0-18	---	5.1-7.3	0	0	0	0
	16-60	10-21	---	5.1-7.3	0	0	0	0
Ve:								
Vernon-----	0-8	2.0-13	---	6.6-7.3	0-5	0	---	0
	8-13	8.0-24	---	7.4-8.4	0-5	0	---	0
	13-28	16-36	---	7.9-8.4	---	---	---	0
	28-60	16-36	---	7.9-8.4	---	---	---	0
Vf:								
Vernon-----	0-8	2.0-13	---	6.6-7.3	0-5	0	---	0
	8-13	8.0-24	---	7.4-8.4	0-5	0	---	0
	13-28	16-36	---	7.9-8.4	---	---	---	0
	28-60	16-36	---	7.9-8.4	---	---	---	0
W:								
Water-----	---	---	---	---	---	---	---	---
Wa:								
Waldeck-----	0-14	3.0-11	---	7.4-8.4	---	---	---	---
	14-27	3.0-10	---	7.4-8.4	---	---	---	---
	27-60	0.0-3.0	---	7.4-8.4	---	---	---	---
Wb:								
Waurika-----	0-15	6.0-17	---	5.6-7.3	0	0	0.0-2.0	0
	15-40	16-36	---	6.1-8.4	0	0	0.0-4.0	0
	40-53	12-30	---	7.4-8.4	0	0	0.0-8.0	0
	53-60	10-24	---	7.4-8.4	0	0	0.0-8.0	0

WATER FEATURES
Sedgwick County, Kansas

The Water Features table gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The months in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The Water Features table indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The Water Features table indicates surface water depth and the duration and frequency of ponding. Duration is expressed as very brief if less than 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. None means that ponding is not probable; rare that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); occasional that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and frequent that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as extremely brief if 0.1 hour to 4 hours, very brief if 4 hours to 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. None means that flooding is not probable; very rare that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); rare that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); occasional that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); frequent that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and very frequent that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
015LS: Ladysmith-----	D		Ft	Ft	Ft				
		April	0.0	2.0-3.0	---	---	None	---	None
		May	2.0-3.0	2.0-3.0	---	---	None	---	None
		June	2.0-3.0	2.0-3.0	---	---	None	---	None
079CR: Crete-----	C		---	---	---	---	---	---	---
079CT: Crete-----	C		---	---	---	---	---	---	---
079DE: Detroit-----	C		---	---	---	---	---	---	---
		January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
079DU: Drummond-----	D		---	---	---	---	---	---	---
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	---	None
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
079FA: Farnum-----	B		---	---	---	---	---	---	---
079FE: Farnum-----	B		---	---	---	---	---	---	---
079GD: Geary-----	B		---	---	---	---	---	---	---
079KA: Kaski-----	B		---	---	---	---	---	---	---
		March	---	---	---	---	---	Very brief	Occasional
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
079LA: Ladysmith-----	D		---	---	---	---	---	---	---
079LB: Ladysmith-----	D		---	---	---	---	---	---	---
079SM: Smolan-----	C		---	---	---	---	---	---	---
095AD: Albion-----	B		---	---	---	---	---	---	---
095LA: Lincoln-----	A		---	---	---	---	---	---	---
		January	5.0-6.0	>6.0	---	---	---	---	None
		February	5.0-6.0	>6.0	---	---	---	---	None
		March	5.0-6.0	>6.0	---	---	---	---	None
		April	5.0-6.0	>6.0	---	---	---	Very brief	Occasional
		May	5.0-6.0	>6.0	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
		October	---	---	---	---	---	Very brief	Occasional
		November	5.0-6.0	>6.0	---	---	---	---	None
		December	5.0-6.0	>6.0	---	---	---	---	None
095WA:									

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Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Waldeck-----	C	January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
191BA: Bethany-----	C		---	---	---	---	---	---	---
191BB: Bethany-----	C		---	---	---	---	---	---	---
191DR: Dale-----	B	March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
			---	---	---	---	---	---	---
Reinach-----	B	March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
			---	---	---	---	---	---	---
191EA: Elandco-----	B	January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
191LO: Lesho-----	C	March	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		June	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
1011: Albion-----	B		---	---	---	---	---	---	---
Shellabarger-----	B		---	---	---	---	---	---	---
1070: Avans-----	B		---	---	---	---	---	---	---
1071: Avans-----	B		---	---	---	---	---	---	---
1072: Avans-----	B		---	---	---	---	---	---	---
2204: Jamash-----	D		---	---	---	---	---	---	---
Piedmont-----	D		---	---	---	---	---	---	---
2205: Jamash-----	D		---	---	---	---	---	---	---
Piedmont-----	D		---	---	---	---	---	---	---
2207: Jamash-----	D		---	---	---	---	---	---	---
2381:			---	---	---	---	---	---	---

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Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Kanza-----	D		Ft	Ft	Ft				
		January	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		February	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		March	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
		August	---	---	---	---	---	Very brief	Frequent
		September	---	---	---	---	---	Very brief	Frequent
		October	---	---	---	---	---	Very brief	Frequent
		November	---	---	---	---	---	Very brief	Frequent
		December	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
Ninnescah-----	B								
		February	2.0	>6.0	---	---	---	---	None
		March	2.0	>6.0	---	---	---	Long	Occasional
		April	2.0	>6.0	---	---	---	Long	Occasional
		May	2.0	>6.0	---	---	---	Long	Occasional
		June	2.0	>6.0	---	---	---	Long	Occasional
		July	---	---	---	---	---	Long	Occasional
		August	---	---	---	---	---	Long	Occasional
		September	---	---	---	---	---	Long	Occasional
		October	---	---	---	---	---	Long	Occasional
2587: Imano-----	C								
		March	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
		April	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
		May	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
		June	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
		July	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
2948: Nalim-----	B								
			---	---	---	---	---	---	---
3052: Ost-----	B								
			---	---	---	---	---	---	---
Clark-----	B								
			---	---	---	---	---	---	---
3170: Penalosa-----	C								
			---	---	---	---	---	---	---
3171: Penalosa-----	C								
			---	---	---	---	---	---	---
3535: Shellabarger-----	B								
			---	---	---	---	---	---	---
Nalim-----	B								
			---	---	---	---	---	---	---
3639: Taver-----	D								
			---	---	---	---	---	---	---
3966: Willowbrook-----	B								
		February	2.0-4.0	>6.0	---	---	None	---	None
		March	2.0-4.0	>6.0	---	---	None	Brief	Occasional
		April	2.0-4.0	>6.0	---	---	None	Brief	Occasional
		May	2.0-4.0	>6.0	---	---	None	Brief	Occasional
		June	2.0-4.0	>6.0	---	---	None	Brief	Occasional
		July	---	---	---	---	None	Brief	Occasional
		August	---	---	---	---	None	Brief	Occasional
		September	---	---	---	---	None	Brief	Occasional
		October	---	---	---	---	None	Brief	Occasional
4004: Yaggy-----	C								
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	---	---	---	---	---	Brief	Occasional
		December	2.0-4.0	>6.0	---	---	---	---	None
Aa: Albion-----	B								
			---	---	---	---	---	---	---
Shellabarger-----	B								
			---	---	---	---	---	---	---
Ab: Albion-----	B								
			---	---	---	---	---	---	---

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Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Shellabarger-----	B		Ft	Ft	Ft				
Ba: Blanket-----	C		---	---	---	---	---	---	---
Bb: Blanket-----	C		---	---	---	---	---	---	---
BRR: Brewer-----	C		---	---	---	---	---	---	---
		January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
Ca: Canadian-----	B		---	---	---	---	---	---	---
		January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
Cb: Canadian-----	B		---	---	---	---	---	---	---
		January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
Waldeck-----	C		---	---	---	---	---	---	---
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Cc: Carwile-----	D		---	---	---	---	---	---	---
		January	0.0	>6.0	0.0-1.0	Brief	---	---	None
		February	0.0	>6.0	0.0-1.0	Brief	---	---	None
		March	0.0	>6.0	0.0-1.0	Brief	---	---	None
		April	0.0	>6.0	0.0-1.0	Brief	---	---	None
		May	---	---	0.0-	---	---	---	None
		June	---	---	0.0-	---	---	---	None
		July	---	---	0.0-	---	---	---	None
		August	---	---	0.0-	---	---	---	None
		September	---	---	0.0-	---	---	---	None
		October	0.0	>6.0	0.0-1.0	Brief	---	---	None
		November	0.0	>6.0	0.0-1.0	Brief	---	---	None
		December	0.0	>6.0	0.0-1.0	Brief	---	---	None
Cd: Clark-----	B		---	---	---	---	---	---	---
Ost-----	B		---	---	---	---	---	---	---

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Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Ce: Cline-----	C		---	---	---	---	---	---	---
Ea: Elandco-----	B		---	---	---	---	---	---	---
		January	---	---	---	---	---	---	Rare
		February	---	---	---	---	---	---	Rare
		March	---	---	---	---	---	---	Rare
		April	---	---	---	---	---	---	Rare
		May	---	---	---	---	---	---	Rare
		June	---	---	---	---	---	---	Rare
		July	---	---	---	---	---	---	Rare
		August	---	---	---	---	---	---	Rare
		September	---	---	---	---	---	---	Rare
		October	---	---	---	---	---	---	Rare
		November	---	---	---	---	---	---	Rare
		December	---	---	---	---	---	---	Rare
Eb: Elandco-----	B		---	---	---	---	---	---	---
		January	---	---	---	---	---	Brief	Occasional
		February	---	---	---	---	---	Brief	Occasional
		March	---	---	---	---	---	Brief	Occasional
		April	---	---	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		October	---	---	---	---	---	Brief	Occasional
		November	---	---	---	---	---	Brief	Occasional
		December	---	---	---	---	---	Brief	Occasional
Ec: Elandco-----	B		---	---	---	---	---	---	---
		January	---	---	---	---	---	Brief	Frequent
		February	---	---	---	---	---	Brief	Frequent
		March	---	---	---	---	---	Brief	Frequent
		April	---	---	---	---	---	Brief	Frequent
		May	---	---	---	---	---	Brief	Frequent
		October	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	Brief	Frequent
Fa: Farnum-----	B		---	---	---	---	---	---	---
Fb: Farnum-----	B		---	---	---	---	---	---	---
Fc: Farnum-----	B		---	---	---	---	---	---	---
Ga: Goessel-----	D		---	---	---	---	---	---	---
		April	2.0-3.0	>6.0	---	---	---	---	None
		May	2.0-3.0	>6.0	---	---	---	---	None
		June	2.0-3.0	>6.0	---	---	---	---	None
Gb: Goessel-----	D		---	---	---	---	---	---	---
		April	2.0-3.0	>6.0	---	---	---	---	None
		May	2.0-3.0	>6.0	---	---	---	---	None
		June	2.0-3.0	>6.0	---	---	---	---	None
Ia: Irwin-----	D		---	---	---	---	---	---	---
Ib: Irwin-----	D		---	---	---	---	---	---	---
Ic: Irwin-----	D		---	---	---	---	---	---	---
INT: Aquolls-----	C		---	---	---	---	---	---	---
		March	0.0	>6.0	0.0-0.8	Brief	Occasional	---	None
		April	0.0	>6.0	0.0-0.8	Brief	Occasional	---	None
		May	0.0	>6.0	0.0-0.8	Brief	Occasional	---	None
		June	0.0	>6.0	0.0-0.8	Brief	Occasional	---	None
KAA: Kaski-----	B		---	---	---	---	---	---	---
		March	---	---	---	---	---	Very brief	Occasional
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
La:			---	---	---	---	---	---	---

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Lesho-----	C		Ft	Ft	Ft				
		March	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		June	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
Lb: Lincoln-----	A								
		January	5.0-6.0	>6.0	---	---	---	---	None
		February	5.0-6.0	>6.0	---	---	---	---	None
		March	5.0-6.0	>6.0	---	---	---	---	None
		April	5.0-6.0	>6.0	---	---	---	Brief	Frequent
		May	5.0-6.0	>6.0	---	---	---	Brief	Frequent
		June	---	---	---	---	---	Brief	Frequent
		July	---	---	---	---	---	Brief	Frequent
		August	---	---	---	---	---	Brief	Frequent
		September	---	---	---	---	---	Brief	Frequent
		October	---	---	---	---	---	Brief	Frequent
		November	5.0-6.0	>6.0	---	---	---	---	None
		December	5.0-6.0	>6.0	---	---	---	---	None
M-W: Miscellaneous Water-----	---								
			---	---	---	---	---	---	---
Ma: Milan-----	B								
			---	---	---	---	---	---	---
Mb: Milan-----	B								
			---	---	---	---	---	---	---
Mc: Milan-----	B								
			---	---	---	---	---	---	---
Na: Naron-----	B								
			---	---	---	---	---	---	---
Oc: Wellsford-----	D								
			---	---	---	---	---	---	---
Od: Wellsford-----	D								
			---	---	---	---	---	---	---
Rock Outcrop-----	D								
			---	---	---	---	---	---	---
Pa: Pits-----	---								
			---	---	---	---	---	---	---
Pb: Plevna-----	D								
		January	0.0-2.0	>6.0	---	---	---	---	None
		February	0.0-2.0	>6.0	---	---	---	---	None
		March	0.0-2.0	>6.0	---	---	---	Long	Frequent
		April	0.0-2.0	>6.0	---	---	---	Long	Frequent
		May	0.0-2.0	>6.0	---	---	---	Long	Frequent
		June	0.0-2.0	>6.0	---	---	---	Long	Frequent
		July	0.0-2.0	>6.0	---	---	---	Long	Frequent
		August	0.0-2.0	>6.0	---	---	---	Long	Frequent
		September	0.0-2.0	>6.0	---	---	---	Long	Frequent
		October	0.0-2.0	>6.0	---	---	---	Long	Frequent
		November	0.0-2.0	>6.0	---	---	---	---	None
		December	0.0-2.0	>6.0	---	---	---	---	None
Pc: Pratt-----	A								
			---	---	---	---	---	---	---
Pd: Pratt-----	A								
			---	---	---	---	---	---	---
Tivoli-----	A								
			---	---	---	---	---	---	---
Ra: Renfrow-----	D								
			---	---	---	---	---	---	---
Rb: Renfrow-----	D								
			---	---	---	---	---	---	---
Rc: Renfrow-----	D								
			---	---	---	---	---	---	---
Wellsford-----	D								
			---	---	---	---	---	---	---
Rd: Rosehill-----	D								
			---	---	---	---	---	---	---
Sa: Shellabarger-----	B								

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Sb: Shellabarger-----	B		---	---	---	---	---	---	---
Sc: Shellabarger-----	B		---	---	---	---	---	---	---
Ta: Tabler-----	D		---	---	---	---	---	---	---
Tb: Tabler-----	D		---	---	---	---	---	---	---
Drummond-----	D		---	---	---	---	---	---	---
		January	2.0-6.0	>6.0	---	---	---	---	None
		February	2.0-6.0	>6.0	---	---	---	---	None
		March	2.0-6.0	>6.0	---	---	---	---	None
		April	2.0-6.0	>6.0	---	---	---	---	None
		November	2.0-6.0	>6.0	---	---	---	---	None
		December	2.0-6.0	>6.0	---	---	---	---	None
Ua: Urban Land-----	---		---	---	---	---	---	---	---
Canadian-----	B		---	---	---	---	---	---	---
Ub: Urban Land-----	---		---	---	---	---	---	---	---
Elandco-----	B		---	---	---	---	---	---	---
Uc: Urban Land-----	---		---	---	---	---	---	---	---
Farnum-----	B		---	---	---	---	---	---	---
Ud: Urban Land-----	---		---	---	---	---	---	---	---
Irwin-----	D		---	---	---	---	---	---	---
Ue: Urban Land-----	---		---	---	---	---	---	---	---
Tabler-----	D		---	---	---	---	---	---	---
Va: Vanoss-----	B		---	---	---	---	---	---	---
Vb: Vanoss-----	B		---	---	---	---	---	---	---
Vc: Vanoss-----	B		---	---	---	---	---	---	---
Vd: Vanoss-----	B		---	---	---	---	---	---	---
Ve: Vernon-----	D		---	---	---	---	---	---	---
Vf: Vernon-----	D		---	---	---	---	---	---	---
W: Water-----	---		---	---	---	---	---	---	---
Wa: Waldeck-----	C		---	---	---	---	---	---	---
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Wb:									

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Waurika-----	D	January	0.5-1.0	1.0-2.0	---	---	---	---	None
		February	0.5-1.0	1.0-2.0	---	---	---	---	None
		March	0.5-1.0	1.0-2.0	---	---	---	---	None
		April	0.5-1.0	1.0-2.0	---	---	---	---	None
		May	0.5-1.0	1.0-2.0	---	---	---	---	None
		November	0.5-1.0	1.0-2.0	---	---	---	---	None
		December	0.5-1.0	1.0-2.0	---	---	---	---	None

The following table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
015LS:							
Ladysmith-----	---	---	---	---	Moderate	High	Low
079CR:							
Crete-----	---	---	---	---	Low	Moderate	Low
079CT:							
Crete-----	---	---	---	---	Moderate	Moderate	Low
079DE:							
Detroit-----	---	---	---	---	Low	High	Low
079DU:							
Drummond-----	---	---	---	---	Low	High	High
079FA:							
Farnum-----	---	---	---	---	Low	Moderate	Low
079FE:							
Farnum-----	---	---	---	---	Low	Moderate	Low
079GD:							
Geary-----	---	---	---	---	High	Low	Low
079KA:							
Kaski-----	---	---	---	---	Low	Low	Low
079LA:							
Ladysmith-----	---	---	---	---	Low	High	Low
079LB:							
Ladysmith-----	---	---	---	---	Low	High	Low
079SM:							
Smolan-----	---	---	---	---	Low	Moderate	Low
095AD:							
Albion-----	---	---	---	---	Low	Low	Low
095LA:							
Lincoln-----	---	---	---	---	Low	Low	Low
095WA:							
Waldeck-----	---	---	---	---	Low	Moderate	Low
191BA:							
Bethany-----	---	---	---	---	None	High	Low
191BB:							
Bethany-----	---	---	---	---	None	High	Low
191DR:							
Dale-----	---	---	---	---	None	Moderate	Low
Reinach-----	---	---	---	---	None	Low	Low
191EA:							
Elandco-----	---	---	---	---	Low	Moderate	Low
191LO:							
Lesho-----	---	---	---	---	None	High	Low
1011:							
Albion-----	---	---	---	---	Low	Low	Low
Shellabarger----	---	---	---	---	Low	Low	Moderate
1070:							
Avans-----	---	---	---	---	Low	Moderate	Moderate
1071:							
Avans-----	---	---	---	---	Low	Moderate	Moderate
1072:							
Avans-----	---	---	---	---	Low	Moderate	Moderate
2204:							
Jamash-----	12-15	Bedrock (paralithic)	---	Moderately cemented	None	High	Low
Piedmont-----	32-36	Bedrock (paralithic)	---	Moderately cemented	None	High	Low
2205:							
Jamash-----	12-15	Bedrock (paralithic)	---	Moderately cemented	None	High	Low
Piedmont-----	32-36	Bedrock (paralithic)	---	Moderately cemented	None	High	Low
2207:							
Jamash-----	12-15	Bedrock (paralithic)	---	Moderately cemented	None	High	Low
2381:							
Kanza-----	---	---	---	---	Low	High	Moderate
Ninnescah-----	---	---	---	---	Low	High	Low
2587:							
Imano-----	---	---	---	---	Low	High	Low
2948:							
Nalim-----	---	---	---	---	Low	Moderate	Low
3052:							
Ost-----	---	---	---	---	Low	Moderate	Low
Clark-----	---	---	---	---	Low	Moderate	Low
3170:							
Penalosa-----	---	---	---	---	Low	High	Low
3171:							
Penalosa-----	---	---	---	---	Low	High	Low
3535:							
Shellabarger----	---	---	---	---	Low	Low	Moderate
Nalim-----	---	---	---	---	Low	Moderate	Low
3639:							
Taver-----	---	---	---	---	Low	High	Low
3966:							
Willowbrook----	---	---	---	---	Low	Moderate	Moderate
4004:							
Yaggy-----	---	---	---	---	Low	High	Low

SOIL FEATURES--Continued
Sedgwick County, Kansas

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
Aa:							
Albion-----	---	---	---	---	Low	Low	Low
Shellabarger----	---	---	---	---	Low	Low	Moderate
Ab:							
Albion-----	---	---	---	---	Low	Low	Low
Shellabarger----	---	---	---	---	Low	Low	Moderate
AED:							
Arents, Earthen Dam-----	---	---	---	---	---	---	---
Ba:							
Blanket-----	---	---	---	---	None	High	Low
Bb:							
Blanket-----	---	---	---	---	None	High	Low
BRR:							
Brewer-----	---	---	---	---	None	High	Moderate
Ca:							
Canadian-----	---	---	---	---	Low	Low	Low
Cb:							
Canadian-----	---	---	---	---	Low	Low	Low
Waldeck-----	---	---	---	---	Low	Moderate	Low
Cc:							
Carwile-----	---	---	---	---	Low	High	Moderate
Cd:							
Clark-----	---	---	---	---	Low	Moderate	Low
Ost-----	---	---	---	---	Low	Moderate	Low
Ce:							
Clime-----	20-40	Bedrock (paralithic)	---	Moderately cemented	Low	High	Low
Ea:							
Elandco-----	---	---	---	---	Low	Moderate	Low
Eb:							
Elandco-----	---	---	---	---	Low	Moderate	Low
Ec:							
Elandco-----	---	---	---	---	Low	Moderate	Low
Fa:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Fb:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Fc:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Ga:							
Goessel-----	---	---	---	---	Low	High	Low
Gb:							
Goessel-----	---	---	---	---	Low	High	Low
Ia:							
Irwin-----	---	---	---	---	Low	High	Low
Ib:							
Irwin-----	---	---	---	---	Low	High	Low
Ic:							
Irwin-----	---	---	---	---	Low	High	Low
INT:							
Aquolls-----	---	---	---	---	Low	---	---
KAA:							
Kaski-----	---	---	---	---	Low	Low	Low
La:							
Lesho-----	---	---	---	---	Low	High	Low
Lb:							
Lincoln-----	---	---	---	---	Low	Low	Low
M-W:							
Miscellaneous Water-----	---	---	---	---	---	---	---
Ma:							
Milan-----	---	---	---	---	Low	Moderate	Low
Mb:							
Milan-----	---	---	---	---	Low	Moderate	Low
Mc:							
Milan-----	---	---	---	---	Low	Moderate	Low
Na:							
Naron-----	---	---	---	---	Low	Low	Low
Oc:							
Wellsford-----	10-20	Bedrock (paralithic)	---	Extremely weakly cemented	None	High	Low
Od:							
Wellsford-----	10-20	Bedrock (paralithic)	---	Extremely weakly cemented	None	High	Low
Rock Outcrop----	---	---	---	---	None	---	---
Pa:							
Pits-----	---	---	---	---	---	---	---
Pb:							
Plevna-----	---	---	---	---	Low	High	Low
Pc:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Pd:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Tivoli-----	---	---	---	---	Low	Low	Low
Ra:							
Renfrow-----	---	---	---	---	None	High	Low

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated Steel	Concrete
Rb: Renfrow-----	---	---	---	---	None	High	Low
Rc: Renfrow-----	---	---	---	---	None	High	Low
Wellsford-----	10-20	Bedrock (paralithic)	---	Extremely weakly cemented	None	High	Low
Rd: Rosehill-----	20-40	Bedrock (paralithic)	---	---	Low	High	Low
Sa: Shellabarger----	---	---	---	---	Low	Low	Moderate
Sb: Shellabarger----	---	---	---	---	Low	Low	Moderate
Sc: Shellabarger----	---	---	---	---	Low	Low	Moderate
Ta: Tabler-----	---	---	---	---	Low	High	Low
Tb: Tabler-----	---	---	---	---	Low	High	Low
Drummond-----	---	---	---	---	Low	High	High
Ua: Urban Land-----	---	---	---	---	---	---	---
Canadian-----	---	---	---	---	Low	Low	Low
Ub: Urban Land-----	---	---	---	---	---	---	---
Elandco-----	---	---	---	---	None	Moderate	Low
Uc: Urban Land-----	---	---	---	---	---	---	---
Farnum-----	---	---	---	---	Low	Moderate	Low
Ud: Urban Land-----	---	---	---	---	---	---	---
Irwin-----	---	---	---	---	None	High	Low
Ue: Urban Land-----	---	---	---	---	---	---	---
Tabler-----	---	---	---	---	Low	High	Low
Va: Vanoss-----	---	---	---	---	Low	Moderate	Moderate
Vb: Vanoss-----	---	---	---	---	Low	Moderate	Moderate
Vc: Vanoss-----	---	---	---	---	Low	Moderate	Moderate
Vd: Vanoss-----	---	---	---	---	Low	Moderate	Moderate
Ve: Vernon-----	---	---	---	---	None	High	Low
Vf: Vernon-----	---	---	---	---	None	High	Low
W: Water-----	---	---	---	---	Low	---	---
Wa: Waldeck-----	---	---	---	---	Low	Moderate	Low
Wb: Waurika-----	---	---	---	---	Low	High	Moderate

WATER MANAGEMENT
Sedgwick County, Kansas

The soils of the survey area are rated in the Water Management table according to limitations that affect their suitability for water management. Soils are rated for pond reservoir areas, drainage, irrigation, terraces and diversions, and grassed waterways. Restrictive features that affect each soil for the specified use is also provided in the table.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Moderately limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Limited indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but generally require special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate to high maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Limitation class terms, such as very limited or limited, etc., limitation ratings, and numerical ratings are shown for each soil feature listed. As many as three soil features may be listed for each soil component if applicable. The overall limitation rating for the soil component is based on the most severe limitation.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects traffic ability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditch banks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a very limited hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, which conduct surface water to outlets at a non-erosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
015LS: Ladysmith-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
079CR: Crete-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
079CT: Crete-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
079DE: Detroit-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
079DU: Drummond-----	Limitation: excess sodium excess salt percs slowly	Limitation: percs slowly wetness droughty	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium excess salt
079FA: Farnum-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
079FE: Farnum-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
079GD: Geary-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
079KA: Kaski-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
079LA: Ladysmith-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
079LB: Ladysmith-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
079SM: Smolan-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
095AD: Albion-----	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
095LA: Lincoln-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
095WA: Waldeck-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness soil blowing	Limitation: too sandy wetness soil blowing	Favorable
191BA: Bethany-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
191BB: Bethany-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
191DR: Dale-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Reinach-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
191EA: Elandco-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
191LO: Lesho-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
1011: Albion-----	Limitation: deep to water	Limitation: soil blowing	Limitation: too sandy soil blowing	Favorable

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Shellabarger----	Limitation: deep to water	Favorable	Limitation: soil blowing	Favorable
1070: Avans-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
1071: Avans-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
1072: Avans-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
2204: Jamash-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily rooting depth depth to rock
Piedmont-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily rooting depth depth to rock
2205: Jamash-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily rooting depth depth to rock
Piedmont-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily rooting depth depth to rock
2207: Jamash-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily rooting depth depth to rock
2381: Kanza-----	Limitation: flooding cutbanks cave	Limitation: wetness droughty	Limitation: too sandy wetness	Limitation: wetness droughty
Ninnescah-----	Limitation: flooding cutbanks cave	Limitation: wetness soil blowing	Limitation: too sandy wetness soil blowing	Limitation: wetness
2587: Imano-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
2948: Nalim-----	Limitation: deep to water	Favorable	Favorable	Favorable
3052: Ost-----	Limitation: deep to water	Favorable	Favorable	Favorable
Clark-----	Limitation: deep to water	Favorable	Favorable	Favorable
3170: Penalosa-----	Limitation: deep to water	Limitation: percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
3171: Penalosa-----	Limitation: deep to water	Limitation: percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
3535: Shellabarger----	Limitation: deep to water	Favorable	Limitation: soil blowing	Favorable
Nalim-----	Limitation: deep to water	Favorable	Favorable	Favorable
3639: Taver-----	Limitation: deep to water	Limitation: percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
3966: Willowbrook----	Limitation: flooding cutbanks cave	Limitation: flooding wetness soil blowing	Limitation: too sandy wetness soil blowing	Favorable
4004: Yaggy-----	Limitation: flooding cutbanks cave	Limitation: wetness soil blowing droughty	Limitation: too sandy wetness soil blowing	Limitation: droughty
Aa: Albion-----	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Shellabarger----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Ab: Albion-----	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope
AED: Arents, Earthen Dam-----	---	---	---	---
Ba: Blanket-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Bb: Blanket-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
BRR: Brewer-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Ca: Canadian-----	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: soil blowing	Limitation: droughty
Cb: Canadian-----	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: soil blowing	Limitation: droughty
Waldeck-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness soil blowing	Limitation: too sandy wetness soil blowing	Favorable
Cc: Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth
Cd: Clark-----	Limitation: deep to water	Favorable	Favorable	Favorable
Ost-----	Limitation: deep to water	Favorable	Favorable	Favorable
Ce: Clime-----	Limitation: deep to water	Limitation: percs slowly slope slow intake	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Ea: Elandco-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Eb: Elandco-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
Ec: Elandco-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
Fa: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Fb: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Fc: Farnum-----	Limitation: deep to water	Favorable	Limitation: too sandy	Favorable
Ga: Goessel-----	Limitation: percs slowly	Limitation: percs slowly slow intake wetness	Limitation: percs slowly wetness	Limitation: percs slowly
Gb: Goessel-----	Limitation: percs slowly	Limitation: percs slowly slow intake wetness	Limitation: percs slowly wetness	Limitation: percs slowly
Ia: Irwin-----	Limitation: deep to water	Limitation: percs slowly	Limitation: percs slowly	Limitation: percs slowly

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Ib: Irwin-----	Limitation: deep to water	Limitation: percs slowly slope	Limitation: percs slowly	Limitation: percs slowly
Ic: Irwin-----	Limitation: deep to water	Limitation: percs slowly slope	Limitation: percs slowly	Limitation: percs slowly
INT: Aguolls-----	---	---	---	---
KAA: Kaski-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
La: Lesho-----	Limitation: flooding outbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
Lb: Lincoln-----	Limitation: deep to water	Limitation: flooding soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
M-W: Miscellaneous Water-----	---	---	---	---
Ma: Milan-----	Limitation: deep to water	Favorable	Favorable	Favorable
Mb: Milan-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Mc: Milan-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Na: Naron-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Oc: Wellsford-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Od: Wellsford-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Rock Outcrop----	---	---	---	---
Pa: Pits-----	---	---	---	---
Pb: Plevna-----	Limitation: flooding	Limitation: flooding wetness soil blowing	Limitation: wetness soil blowing	Limitation: wetness
Pc: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Pd: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Ra: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Rb: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Rc: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Wellsford-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Rd: Rosehill-----	Limitation: deep to water	Limitation: percs slowly slow intake depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Sa: Shellabarger----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Sb: Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Favorable
Sc: Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Favorable
Ta: Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Tb: Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Drummond-----	Limitation: excess sodium percs slowly	Limitation: percs slowly wetness droughty	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium droughty
Ua: Urban Land-----	---	---	---	---
Canadian-----	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: soil blowing	Limitation: droughty
Ub: Urban Land-----	---	---	---	---
Elandco-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Uc: Urban Land-----	---	---	---	---
Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Ud: Urban Land-----	---	---	---	---
Irwin-----	Limitation: deep to water	Limitation: percs slowly	Limitation: percs slowly	Limitation: percs slowly
Ue: Urban Land-----	---	---	---	---
Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Va: Vanoss-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Vb: Vanoss-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Vc: Vanoss-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
Vd: Vanoss-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
Ve: Vernon-----	Limitation: deep to water	Limitation: percs slowly soil blowing droughty	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily rooting depth droughty
Vf: Vernon-----	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily rooting depth droughty
W: Water-----	---	---	---	---
Wa: Waldeck-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness soil blowing	Limitation: too sandy wetness soil blowing	Favorable

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Wb: Waurika-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Somewhat limited Seepage	0.01	Very limited Depth to saturated zone Hard to pack	1.00 0.98	Somewhat limited Slow refill Cutbanks cave Deep to water	0.99 0.10 0.06
079CR: Crete-----	100	Somewhat limited Seepage	0.57	Not limited		Very limited Deep to water	1.00
079CT: Crete-----	100	Somewhat limited Seepage	0.57	Not limited		Very limited Deep to water	1.00
079DE: Detroit-----	100	Somewhat limited Seepage	0.05	Not limited		Very limited Deep to water	1.00
079DU: Drummond-----	75	Not limited		Somewhat limited Depth to saturated zone Salinity	0.43 0.12	Very limited Slow refill Salty water Deep to water Cutbanks cave	1.00 0.50 0.25 0.10
079FA: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping Seepage	0.18 0.08	Very limited Deep to water	1.00
079FE: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage Piping	0.08 0.05	Very limited Deep to water	1.00
079GD: Geary-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.06	Very limited Deep to water	1.00
079KA: Kaski-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.76	Very limited Deep to water	1.00
079LA: Ladysmith-----	100	Somewhat limited Seepage	0.01	Somewhat limited Hard to pack	0.99	Very limited Deep to water	1.00
079LB: Ladysmith-----	100	Somewhat limited Seepage	0.01	Somewhat limited Hard to pack	0.99	Very limited Deep to water	1.00
079SM: Smolan-----	90	Somewhat limited Seepage	0.05	Somewhat limited Hard to pack	0.42	Very limited Deep to water	1.00
095AD: Albion-----	100	Very limited Seepage Slope	1.00 0.00	Somewhat limited Seepage	0.10	Very limited Deep to water	1.00
095LA: Lincoln-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Deep to water	1.00
095WA: Waldeck-----	100	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
191BA: Bethany-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
191BB: Bethany-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191DR: Dale-----	50	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.81	Very limited Deep to water	1.00
Reinach-----	50	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
191EA: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
191LO: Lesho-----	100	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
1011: Albion-----	70	Very limited Seepage	1.00	Somewhat limited Seepage	0.90	Very limited Deep to water	1.00
Shellabarger-----	30	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.88	Very limited Deep to water	1.00
1070: Avans-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.74	Very limited Deep to water	1.00
1071: Avans-----	85	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.74	Very limited Deep to water	1.00
1072: Avans-----	85	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.74	Very limited Deep to water	1.00
2204: Jamash-----	50	Somewhat limited Depth to bedrock	0.66	Very limited Thin layer	1.00	Very limited Deep to water	1.00
Piedmont-----	50	Somewhat limited Depth to bedrock Seepage	0.08 0.05	Somewhat limited Thin layer	0.81	Very limited Deep to water	1.00
2205: Jamash-----	60	Somewhat limited Depth to bedrock	0.66	Very limited Thin layer	1.00	Very limited Deep to water	1.00
Piedmont-----	40	Somewhat limited Depth to bedrock Seepage	0.08 0.05	Somewhat limited Thin layer	0.81	Very limited Deep to water	1.00
2207: Jamash-----	80	Somewhat limited Depth to bedrock	0.66	Very limited Thin layer	1.00	Very limited Deep to water	1.00
2381: Kanza-----	50	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.90	Very limited Cutbanks cave	1.00
Ninnescah-----	50	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.12	Very limited Cutbanks cave Deep to water	1.00 0.00
2587: Imano-----	85	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
2948: Nalim-----	80	Very limited Seepage	1.00	Somewhat limited Seepage	0.98	Very limited Deep to water	1.00
3052: Ost-----	55	Somewhat limited		Somewhat limited		Very limited	

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Clark-----	45	Seepage	0.05	Piping	0.82	Deep to water	1.00
3170: Penalosa-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.52	Very limited Deep to water	1.00
3171: Penalosa-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
3535: Shellabarger-----	55	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.88	Very limited Deep to water	1.00
Nalim-----	45	Very limited Seepage	1.00	Somewhat limited Seepage	0.98	Very limited Deep to water	1.00
3639: Taver-----	90	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.00	Very limited Deep to water	1.00
3966: Willowbrook-----	90	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
4004: Yaggy-----	95	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
Aa: Albion-----	70	Very limited Seepage	1.00	Somewhat limited Seepage	0.01	Very limited Deep to water	1.00
Shellabarger-----	30	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
Ab: Albion-----	50	Very limited Seepage Slope	1.00 0.00	Somewhat limited Seepage	0.01	Very limited Deep to water	1.00
Shellabarger-----	50	Somewhat limited Seepage Slope	0.70 0.00	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
Bb: Blanket-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
BRR: Brewer-----	85	Not limited		Somewhat limited Hard to pack	0.20	Very limited Deep to water	1.00
Ca: Canadian-----	100	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.07	Very limited Deep to water	1.00
Cb: Canadian-----	70	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.07	Very limited Deep to water	1.00
Waldeck-----	30	Very limited		Somewhat limited		Very limited	

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cc: Carwile-----	100	Seepage	1.00	Depth to saturated zone Seepage	0.43 0.15	Cutbanks cave	1.00
		Somewhat limited Seepage	0.57	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill	0.30
						Cutbanks cave	0.10
Cd: Clark-----	75	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.13	Very limited Deep to water	1.00
Ost-----	25	Somewhat limited Seepage	0.05	Very limited Piping	1.00	Very limited Deep to water	1.00
Ce: Clime-----	100	Somewhat limited Depth to bedrock	0.19	Somewhat limited Thin layer Hard to pack	0.93 0.50	Very limited Deep to water	1.00
Ea: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
Eb: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
Ec: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
Fa: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Fb: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Fc: Farnum-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.33	Very limited Deep to water	1.00
Ga: Goessel-----	100	Not limited		Very limited Hard to pack Depth to saturated zone	1.00 0.86	Very limited Deep to water	1.00
Gb: Goessel-----	100	Not limited		Very limited Hard to pack Depth to saturated zone	1.00 0.86	Very limited Deep to water	1.00
Ia: Irwin-----	100	Not limited		Somewhat limited Hard to pack	0.21	Very limited Deep to water	1.00
Ib: Irwin-----	100	Not limited		Somewhat limited Hard to pack	0.21	Very limited Deep to water	1.00
Ic: Irwin-----	100	Not limited		Somewhat limited Hard to pack	0.25	Very limited Deep to water	1.00
INT: Aquolls-----	100	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Cutbanks cave	0.10
KAA: Kaski-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.76	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
La: Lesho-----	100	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Seepage	0.43 0.12	Very limited Cutbanks cave Deep to water	1.00 0.25
Lb: Lincoln-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Deep to water	1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.10	Very limited Deep to water	1.00
Mb: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.10	Very limited Deep to water	1.00
Mc: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Na: Naron-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
Oc: Wellsford-----	100	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Od: Wellsford-----	60	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave	1.00
Pc: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Deep to water	1.00
Pd: Pratt-----	65	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Deep to water	1.00
Tivoli-----	35	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.50	Very limited Deep to water	1.00
Ra: Renfrow-----	100	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
Rb: Renfrow-----	100	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
Rc: Renfrow-----	65	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Wellsford-----	35	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Rd: Rosehill-----	100	Somewhat limited Depth to bedrock	0.11	Very limited Hard to pack Thin layer	1.00 0.85	Very limited Deep to water	1.00
Sa: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
Sb: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
Sc: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.08	Very limited Deep to water	1.00
Ta: Tabler-----	100	Not limited		Somewhat limited Hard to pack	0.16	Very limited Deep to water	1.00
Tb: Tabler-----	60	Not limited		Somewhat limited Hard to pack	0.16	Very limited Deep to water	1.00
Drummond-----	40	Not limited		Somewhat limited Piping	0.02	Somewhat limited Deep to water Cutbanks cave Salty water	0.81 0.10 0.01
Ua: Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.07	Very limited Deep to water	1.00
Ub: Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
Uc: Urban Land-----	70	Not rated		Not rated		Not rated	
Farnum-----	30	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.72	Very limited Deep to water	1.00
Ud: Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Not limited		Somewhat limited Hard to pack	0.21	Very limited Deep to water	1.00
Ue: Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Not limited		Somewhat limited Hard to pack	0.16	Very limited Deep to water	1.00
Va: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.43	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Vb: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.43	Very limited Deep to water	1.00
Vc: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.43	Very limited Deep to water	1.00
Vd: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.36	Very limited Deep to water	1.00
Ve: Vernon-----	100	Not limited		Not limited		Very limited Deep to water	1.00
Vf: Vernon-----	100	Not limited		Not limited		Very limited Deep to water	1.00
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Seepage	0.43 0.15	Very limited Cutbanks cave Deep to water	1.00 0.25
Wb: Waurika-----	100	Not limited		Very limited Depth to saturated zone	1.00	Very limited Deep to water	1.00

SANITARY FACILITIES
Sedgwick County, Kansas

Sanitary Facilities

The following tables show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

SANITARY FACILITIES
Sedgwick County, Kansas

In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Not limited	
079CR: Crete-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.32
079CT: Crete-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage Slope	0.32 0.00
079DE: Detroit-----	100	Very limited Restricted permeability Flooding	1.00 0.40	Somewhat limited Flooding	0.40
079DU: Drummond-----	75	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
079FA: Farnum-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
079FE: Farnum-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
079GD: Geary-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
079KA: Kaski-----	100	Very limited Flooding Restricted permeability	1.00 0.50	Very limited Flooding Seepage	1.00 0.50
079LA: Ladysmith-----	100	Very limited Restricted permeability	1.00	Not limited	
079LB: Ladysmith-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
079SM: Smolan-----	90	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
095AD: Albion-----	100	Very limited Filtering capacity Slope	1.00 0.37	Very limited Seepage Slope	1.00 1.00
095LA: Lincoln-----	100	Very limited Flooding Filtering capacity Depth to saturated zone	1.00 1.00 0.08	Very limited Flooding Seepage	1.00 1.00
095WA: Waldeck-----	100	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
191BA: Bethany-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
191BB: Bethany-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
191DR: Dale-----	50	Somewhat limited Restricted permeability Flooding	0.50	Somewhat limited Seepage	0.50
Reinach-----	50	Somewhat limited Restricted permeability Flooding	0.40 0.50 0.40	Flooding Somewhat limited Flooding	0.40 0.40
191EA: Elandco-----	100	Somewhat limited Restricted permeability Flooding	0.50 0.40	Somewhat limited Seepage Flooding	0.50 0.40
191LO: Lesho-----	100	Very limited Flooding Restricted permeability Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
1011: Albion-----	70	Very limited Filtering capacity	1.00	Very limited Seepage	1.00
Shellabarger-----	30	Somewhat limited Restricted permeability	0.50	Slope Somewhat limited Seepage Slope	0.09 0.50 0.00
1070: Avans-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
1071: Avans-----	85	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
1072: Avans-----	85	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
2204: Jamash-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock	1.00
Piedmont-----	50	Very limited Restricted permeability Depth to bedrock	1.00 1.00	Very limited Depth to soft bedrock	1.00
2205: Jamash-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock Slope	1.00 0.00
Piedmont-----	40	Very limited Restricted permeability Depth to bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 0.00
2207: Jamash-----	80	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock Slope	1.00 0.67
2381: Kanza-----	50	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ninnescah-----	50	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
2587: Imano-----	85	Very limited Flooding Restricted permeability Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
2948: Nalim-----	80	Very limited Restricted permeability Filtering capacity	1.00 1.00	Very limited Seepage	1.00
3052: Ost-----	55	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Clark-----	45	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
3170: Penalosa-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
3171: Penalosa-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
3535: Shellabarger-----	55	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
Nalim-----	45	Very limited Restricted permeability Filtering capacity	1.00 1.00	Very limited Seepage Slope	1.00 0.00
3639: Taver-----	90	Very limited Restricted permeability	1.00	Not limited	
3966: Willowbrook-----	90	Very limited Flooding Filtering capacity Depth to saturated zone	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
4004: Yaggy-----	95	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
Aa: Albion-----	70	Very limited Filtering capacity	1.00	Very limited Seepage Slope	1.00 0.09
Shellabarger-----	30	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.09
Ab: Albion-----	50	Very limited Filtering capacity Slope	1.00 0.37	Very limited Seepage Slope	1.00 1.00
Shellabarger-----	50	Somewhat limited		Very limited	

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AED: Arents, Earthen Dam-	100	Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Ba: Blanket-----	100	Not rated		Not rated	
Bb: Blanket-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
BRR: Brewer-----	85	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
		Flooding	0.40	Slope	0.00
Ca: Canadian-----	100	Very limited Filtering capacity	1.00	Somewhat limited Flooding	0.40
Cb: Canadian-----	70	Flooding	0.40	Very limited Seepage	1.00
		Very limited Filtering capacity	1.00	Flooding	0.40
Waldeck-----	30	Flooding	0.40	Very limited Seepage	1.00
		Depth to saturated zone	1.00	Flooding	1.00
Cc: Carwile-----	100	Filtering capacity	1.00	Depth to saturated zone	1.00
Cd: Clark-----	75	Very limited Restricted permeability	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.32
Ost-----	25	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Ce: Clime-----	100	Very limited Restricted permeability	1.00	Slope	0.09
		Depth to bedrock	1.00	Somewhat limited Slope	0.09
Ea: Elandco-----	100	Very limited Restricted permeability	1.00	Very limited Depth to soft bedrock	1.00
Eb: Elandco-----	100	Flooding	0.67	Slope	0.67
		Restricted permeability	0.50	Somewhat limited Seepage	0.50
Ec: Elandco-----	100	Flooding	0.40	Flooding	0.40
		Restricted permeability	0.50	Very limited Seepage	0.50
Fa: Farnum-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
Fb: Farnum-----	100	Restricted permeability	0.50	Seepage	0.50
		Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
				Slope	0.00

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Fc: Farnum-----	100	Very limited Restricted permeability Filtering capacity	1.00 1.00	Very limited Seepage	1.00
Ga: Goessel-----	100	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone	0.81
Gb: Goessel-----	100	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone Slope	0.81 0.00
Ia: Irwin-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Ib: Irwin-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.67
Ic: Irwin-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.33
INT: Aquolls-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
KAA: Kaski-----	100	Very limited Flooding Restricted permeability	1.00 0.50	Very limited Flooding Seepage	1.00 0.50
La: Lesho-----	100	Very limited Flooding Restricted permeability Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
Lb: Lincoln-----	100	Very limited Flooding Filtering capacity Depth to saturated zone	1.00 1.00 0.08	Very limited Flooding Seepage	1.00 1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated	
Ma: Milan-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Mb: Milan-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.67
Mc: Milan-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.33
Na: Naron-----	100	Somewhat limited Restricted permeability	0.50	Very limited Seepage	1.00
Oc: Wellsford-----	100	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock Slope	1.00 0.00

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Od: Wellsford-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock Slope	1.00
Rock Outcrop-----	40	Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated	
Pb: Plevna-----	100	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
Pc: Pratt-----	100	Very limited Filtering capacity	1.00	Very limited Seepage Slope	1.00 0.33
Pd: Pratt-----	65	Very limited Filtering capacity Slope	1.00 0.04	Very limited Seepage Slope	1.00 1.00
Tivoli-----	35	Very limited Filtering capacity Slope	1.00 1.00	Very limited Seepage Slope	1.00 1.00
Ra: Renfrow-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Rb: Renfrow-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.33
Rc: Renfrow-----	65	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.09
Wellsford-----	35	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock Slope	1.00 0.09
Rd: Rosehill-----	100	Very limited Restricted permeability Depth to bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 0.00
Sa: Shellabarger-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.00
Sb: Shellabarger-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
Sc: Shellabarger-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
Ta: Tabler-----	100	Very limited Restricted permeability	1.00	Not limited	
Tb: Tabler-----	60	Very limited Restricted permeability	1.00	Not limited	
Drummond-----	40	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone	0.71

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ua: Urban Land-----	70	Not rated		Not rated	
Canadian-----	30	Very limited Filtering capacity	1.00	Very limited Seepage	1.00
Ub: Urban Land-----	75	Not rated		Not rated	
Elandco-----	25	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Uc: Urban Land-----	70	Not rated		Not rated	
Farnum-----	30	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
				Slope	0.00
Ud: Urban Land-----	70	Not rated		Not rated	
Irwin-----	30	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Ue: Urban Land-----	70	Not rated		Not rated	
Tabler-----	30	Very limited Restricted permeability	1.00	Not limited	
Va: Vanoss-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Vb: Vanoss-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
				Slope	0.00
Vc: Vanoss-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.67
				Seepage	0.50
Vd: Vanoss-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.67
				Seepage	0.50
Ve: Vernon-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.00
Vf: Vernon-----	100	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.67
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Seepage	1.00 1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
Wb: Waurika-----	100	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Not limited	

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey Hard to compact	1.00 1.00 1.00
079CR: Crete-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
079CT: Crete-----	100	Not limited		Not limited		Very limited Too clayey Hard to compact	1.00 1.00
079DE: Detroit-----	100	Very limited Too clayey Flooding	1.00 0.40	Somewhat limited Flooding	0.40	Very limited Too clayey Hard to compact	1.00 1.00
079DU: Drummond-----	75	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Hard to compact Too clayey Depth to saturated zone	1.00 1.00 0.50 0.09
079FA: Farnum-----	100	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
079FE: Farnum-----	100	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
079GD: Geary-----	100	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
079KA: Kaski-----	100	Very limited Flooding Too clayey	1.00 0.50	Very limited Flooding	1.00	Somewhat limited Too clayey	0.50
079LA: Ladysmith-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
079LB: Ladysmith-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
079SM: Smolan-----	90	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
095AD: Albion-----	100	Very limited Seepage Too Sandy Slope	1.00 1.00 0.37	Very limited Seepage Slope	1.00 0.37	Very limited Too Sandy Seepage Slope Gravel content	1.00 1.00 0.37 0.00
095LA: Lincoln-----	100	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage	1.00 1.00
095WA: Waldeck-----	100	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
191BA: Bethany-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
191BB: Bethany-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
191DR: Dale-----	50	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Not limited	

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Reinach-----	50	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Not limited	
191EA: Elandco-----	100	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Not limited	
191LO: Lesho-----	100	Very limited Flooding Depth to saturated zone Too Sandy Seepage	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
1011: Albion-----	70	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too Sandy Seepage	1.00 1.00
Shellabarger-----	30	Not limited		Not limited		Not limited	
1070: Avans-----	100	Not limited		Not limited		Not limited	
1071: Avans-----	85	Not limited		Not limited		Not limited	
1072: Avans-----	85	Not limited		Not limited		Not limited	
2204: Jamash-----	50	Very limited Depth to bedrock Too clayey	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey	1.00 0.50
Piedmont-----	50	Very limited Depth to bedrock Too clayey	1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
2205: Jamash-----	60	Very limited Depth to bedrock Too clayey	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey	1.00 0.50
Piedmont-----	40	Very limited Depth to bedrock Too clayey	1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
2207: Jamash-----	80	Very limited Depth to bedrock Too clayey	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey	1.00 0.50
2381: Kanza-----	50	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 1.00
Ninnescah-----	50	Too Sandy Very limited Flooding Depth to saturated zone Too Sandy Seepage	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Seepage Depth to saturated zone Too Sandy	1.00 0.86 0.50
2587: Imano-----	85	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
2948: Nalim-----	80	Very limited Seepage Too clayey	1.00 0.50	Not limited		Very limited Seepage Too clayey	1.00 0.50
3052: Ost-----	55	Not limited		Not limited		Not limited	
Clark-----	45	Not limited		Not limited		Not limited	
3170: Penalosa-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
3171: Penalosa-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3535: Shellabarger----- Nalim-----	55 45	Not limited Very limited Seepage Too clayey	1.00 0.50	Not limited Not limited		Not limited Very limited Seepage Too clayey	1.00 0.50
3639: Taver-----	90	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
3966: Willowbrook-----	90	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
4004: Yaggy-----	95	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Aa: Albion-----	70	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too Sandy Seepage Gravel content	1.00 1.00 0.00
Shellabarger----- Ab: Albion-----	30 50	Not limited Very limited Seepage Too Sandy Slope	1.00 1.00 0.37	Not limited Very limited Seepage Slope	1.00 0.37	Not limited Very limited Too Sandy Seepage Slope Gravel content	1.00 1.00 0.37 0.00
Shellabarger-----	50	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
Bb: Blanket-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
BRR: Brewer-----	85	Very limited Too clayey Flooding	1.00 0.40	Somewhat limited Flooding	0.40	Very limited Too clayey Hard to compact	1.00 1.00
Ca: Canadian-----	100	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage	1.00
Cb: Canadian-----	70	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage	1.00
Waldeck-----	30	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Cc: Carwile-----	100	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Hard to compact Too clayey	1.00 0.50
Cd: Clark-----	75	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Ost-----	25	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Ce: Clime-----	100	Very limited		Very limited		Very limited	

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

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Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Depth to bedrock Too clayey Seepage	1.00 1.00 1.00	Depth to bedrock	1.00	Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
Ea: Elandco-----	100	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Not limited	
Eb: Elandco-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Not limited	
Ec: Elandco-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Not limited	
Fa: Farnum-----	100	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Pb: Farnum-----	100	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
Fc: Farnum-----	100	Very limited Seepage Too clayey	1.00 0.50	Not limited		Very limited Seepage Too clayey	1.00 0.50
Ga: Goessel-----	100	Very limited Too clayey Depth to saturated zone	1.00 0.86	Somewhat limited Depth to saturated zone	0.19	Very limited Too clayey Hard to compact Depth to saturated zone	1.00 1.00 0.47
Gb: Goessel-----	100	Very limited Too clayey Depth to saturated zone	1.00 0.86	Somewhat limited Depth to saturated zone	0.19	Very limited Too clayey Hard to compact Depth to saturated zone	1.00 1.00 0.47
Ia: Irwin-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Ib: Irwin-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Ic: Irwin-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
INT: Aquolls-----	100	Very limited Depth to saturated zone Ponding Seepage	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
KAA: Kaski-----	100	Very limited Flooding Too clayey	1.00 0.50	Very limited Flooding	1.00	Somewhat limited Too clayey	0.50
La: Lesho-----	100	Very limited Flooding Depth to saturated zone Too Sandy Seepage	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Lb: Lincoln-----	100	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage	1.00 1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Mb: Milan-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
Mc: Milan-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
Na: Naron-----	100	Very limited Seepage	1.00	Not limited		Not limited	
Oc: Wellsford-----	100	Very limited Depth to bedrock Too clayey Seepage	1.00 1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
Od: Wellsford-----	60	Very limited Depth to bedrock Too clayey Seepage	1.00 1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
Rock Outcrop-----	40	Not rated		Not rated		Not rated	
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone Seepage	1.00 1.00	Depth to saturated zone Seepage	1.00	Seepage	0.50
Pc: Pratt-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too Sandy Seepage	1.00 1.00
Pd: Pratt-----	65	Very limited Seepage Too Sandy Slope	1.00 1.00 0.04	Very limited Seepage Slope	1.00 0.04	Very limited Too Sandy Seepage Slope	1.00 1.00 0.04
Tivoli-----	35	Very limited Seepage Too Sandy Slope	1.00 1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Too Sandy Seepage Slope	1.00 1.00 1.00
Ra: Renfrow-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Rb: Renfrow-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Rc: Renfrow-----	65	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Wellsford-----	35	Very limited Depth to bedrock Too clayey Seepage	1.00 1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
Rd: Rosehill-----	100	Very limited Depth to bedrock Too clayey Seepage	1.00 1.00 1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey Hard to compact	1.00 1.00 1.00
Sa: Shellabarger-----	100	Not limited		Not limited		Not limited	
Sb: Shellabarger-----	100	Not limited		Not limited		Not limited	
Sc: Shellabarger-----	100	Not limited		Not limited		Not limited	
Ta: Tabler-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Tb: Tabler-----	60	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Drummond-----	40	Very limited		Very limited		Very limited	

SANITARY FACILITIES--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
		Seepage	1.00				
Ua:							
Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
Ub:							
Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Not limited		Not limited		Not limited	
Uc:							
Urban Land-----	70	Not rated		Not rated		Not rated	
Farnum-----	30	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Ud:							
Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Ue:							
Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Va:							
Vanoss-----	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Vb:							
Vanoss-----	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Vc:							
Vanoss-----	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Vd:							
Vanoss-----	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Ve:							
Vernon-----	100	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Vf:							
Vernon-----	100	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
W:							
Water-----	100	Not rated		Not rated		Not rated	
Wa:							
Waldeck-----	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Depth to	1.00	Depth to	1.00	Seepage	1.00
		saturated zone		saturated zone			
		Seepage	1.00	Seepage	1.00	Depth to	0.09
						saturated zone	
		Too Sandy	1.00				
Wb:							
Waurika-----	100	Very limited		Very limited		Very limited	
		Depth to	1.00	Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone		saturated zone	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00

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The nature of the soil is also important in the application of organic wastes and wastewater to land as fertilizers and irrigation; it is also important when the soil is used as a medium for treatment and disposal of these wastes. Favorable soil properties are required to prevent environmental damage.

The use of organic wastes and wastewater as production resources will result in energy conservation, prevent the waste of these important resources, and prevent problems associated with their disposal. Where disposal is the goal, and a maximum amount is disposed in a minimum area to hold costs to a minimum, risk of environmental damage is the principal constraint. Where the reuse goal is pursued, and a minimum amount is applied to a maximum area to obtain the greatest benefit, environmental damage is unlikely.

Interpretations developed for waste management may include ratings for (1) manure and food processing wastes; (2) municipal sewage sludge; (3) irrigation use of wastewater; or (4) treatment of wastewater by the slow rate process, overland flow process, or rapid infiltration process. If available, these should be located in this subsection.

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

The Ag-Waste tables show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, phosphorus, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are generally favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

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The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding.

The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

See the National Soil Handbook, September 1992, Part 620, for criteria used in rating soils for sanitary facilities and waste management.

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Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
015LS: Ladysmith-----	90	Very limited Restricted permeability Depth to saturated zone Low adsorption Runoff limitation	1.00 1.00 1.00 0.40	Very limited Restricted permeability Depth to saturated zone Low adsorption	1.00 1.00 1.00	Very limited Restricted permeability Depth to saturated zone Low adsorption	1.00 1.00 1.00
079CR: Crete-----	100	Very limited Restricted permeability Too acid	1.00 0.11	Very limited Restricted permeability Too acid	1.00 0.42	Very limited Restricted permeability Too acid	1.00 0.42
079CT: Crete-----	100	Very limited Restricted permeability Too acid	1.00 0.11	Very limited Restricted permeability Too acid	1.00 0.42	Very limited Restricted permeability Too acid	1.00 0.42
079DE: Detroit-----	100	Very limited Restricted permeability	1.00	Very limited Restricted permeability Flooding	1.00 0.40	Very limited Restricted permeability	1.00
079DU: Drummond-----	75	Very limited Restricted permeability Salinity Depth to saturated zone Runoff limitation Droughty	1.00 0.50 0.43 0.40 0.04	Very limited Restricted permeability Salinity Depth to saturated zone Droughty	1.00 1.00 0.43 0.04	Very limited Restricted permeability Salinity Depth to saturated zone Droughty	1.00 1.00 0.43 0.04
079FA: Farnum-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00
079FE: Farnum-----	100	Not limited		Not limited		Somewhat limited Too steep for surface application	0.31
079GD: Geary-----	100	Somewhat limited Too acid	0.03	Somewhat limited Too acid	0.14	Somewhat limited Too acid	0.14
079KA: Kaski-----	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
079LA: Ladysmith-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
079LB: Ladysmith-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
079SM: Smolan-----	90	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
095AD: Albion-----	100	Very limited Filtering capacity Slope Too acid Droughty	1.00 0.37 0.03 0.00	Very limited Filtering capacity Slope Too acid Droughty	1.00 0.37 0.14 0.00	Very limited Too steep for surface application Filtering capacity Too steep for sprinkler application Too acid Droughty	1.00 1.00 0.59 0.14 0.00
095LA: Lincoln-----	100	Very limited Filtering capacity	1.00	Very limited Flooding	1.00	Very limited Filtering capacity	1.00

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Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
095WA: Waldeck-----	100	Droughty	0.96	Filtering capacity	1.00	Droughty	0.96
		Flooding	0.60	Droughty	0.96	Flooding	0.60
		Leaching limitation	0.45				
		Very limited Filtering capacity	1.00	Very limited Flooding	1.00	Very limited Filtering capacity	1.00
191BA: Bethany-----	100	Flooding	0.60	Filtering capacity	1.00	Flooding	0.60
		Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
191BB: Bethany-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
		Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
191DR: Dale-----	50	Not limited		Somewhat limited Flooding	0.40	Not limited	
Reinach-----	50	Not limited		Somewhat limited Flooding	0.40	Not limited	
191EA: Elandco-----	100	Not limited		Somewhat limited Flooding	0.40	Not limited	
191LO: Lesho-----	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
		Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
1011: Albion-----	70	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Too acid	0.03	Too acid	0.14	Too acid	0.14
						Too steep for surface application	0.00
Shellabarger-----	30	Somewhat limited Too acid	0.11	Somewhat limited Too acid	0.42	Somewhat limited Too acid	0.42
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00
1070: Avans-----	100	Somewhat limited Too acid	0.37	Somewhat limited Too acid	0.96	Somewhat limited Too acid	0.96
1071: Avans-----	85	Somewhat limited Too acid	0.37	Somewhat limited Too acid	0.96	Somewhat limited Too acid	0.96
1072: Avans-----	85	Somewhat limited Too acid	0.37	Somewhat limited Too acid	0.96	Somewhat limited Too acid Too steep for surface application	0.96 0.31
2204: Jamash-----	50	Very limited Restricted permeability	1.00	Very limited Droughty	1.00	Very limited Droughty	1.00
		Depth to bedrock	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Piedmont-----	50	Runoff limitation	0.40				
		Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
		Runoff limitation	0.40	Depth to bedrock	0.29	Depth to bedrock	0.29
2205: Jamash-----	60	Depth to bedrock	0.29	Droughty	0.05	Droughty	0.05
		Droughty	0.05				
2205: Jamash-----	60	Very limited Restricted permeability	1.00	Very limited Droughty	1.00	Very limited Droughty	1.00

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Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Piedmont-----	40	Depth to bedrock	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Runoff limitation	0.40				
		Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
2207: Jamash-----	80	Runoff limitation	0.40	Depth to bedrock	0.29	Depth to bedrock	0.29
		Depth to bedrock	0.29	Droughty	0.05	Droughty	0.05
		Droughty	0.05				
		Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Droughty	1.00	Droughty	1.00
2381: Kanza-----	50	Depth to bedrock	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Runoff limitation	0.40			Too steep for surface application	0.31
		Droughty	0.40				
		Very limited		Very limited		Very limited	
Ninnescah-----	50	Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
		Runoff limitation	0.40	Too acid	0.14	Too acid	0.14
		Too acid	0.03				
2587: Imano-----	85	Depth to saturated zone	1.00	Very limited		Very limited	
		Flooding	0.60	Flooding	1.00	Depth to saturated zone	1.00
		Filtering capacity	0.00	Depth to saturated zone	1.00	Flooding	0.60
		Very limited		Filtering capacity	0.00	Filtering capacity	0.00
		Filtering capacity	1.00	Very limited		Very limited	
2948: Nalim-----	80	Flooding	0.60	Flooding	1.00	Filtering capacity	1.00
		Depth to saturated zone	0.43	Filtering capacity	1.00	Flooding	0.60
		Restricted permeability	0.30	Depth to saturated zone	0.43	Depth to saturated zone	0.43
		Somewhat limited		Restricted permeability	0.22	Restricted permeability	0.22
		Restricted permeability	0.30				
3052: Ost-----	55	Too acid	0.00	Somewhat limited		Somewhat limited	
		Filtering capacity	0.00	Restricted permeability	0.22	Restricted permeability	0.22
		Very limited		Not limited		Not limited	
		Restricted permeability	0.30				
		Not limited					
Clark-----	45						
3170: Penalosa-----	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
3171: Penalosa-----	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
3535: Shellabarger-----	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42	Too acid	0.42
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00
Nalim-----	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
		Too acid	0.00	Too acid	0.01	Too acid	0.01
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00

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Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3639: Taver-----	90	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
3966: Willowbrook-----	90	Very limited Filtering capacity Depth to dense layer Flooding Depth to saturated zone Too acid	1.00 1.00 0.60 0.43 0.01	Very limited Filtering capacity Flooding Depth to saturated zone Too acid	1.00 1.00 0.43 0.03	Very limited Filtering capacity Flooding Depth to saturated zone Too acid	1.00 0.60 0.43 0.03
4004: Yaggy-----	95	Very limited Filtering capacity Flooding Depth to saturated zone Droughty	1.00 0.60 0.43 0.07	Very limited Flooding Filtering capacity Depth to saturated zone Droughty	1.00 1.00 0.43 0.07	Very limited Filtering capacity Flooding Depth to saturated zone Droughty	1.00 0.60 0.43 0.07
Aa: Albion-----	70	Very limited Filtering capacity Too acid	1.00 0.03	Very limited Filtering capacity Too acid	1.00 0.14	Very limited Filtering capacity Too acid Too steep for surface application	1.00 0.14 0.00
Shellabarger-----	30	Somewhat limited Too acid	0.11	Somewhat limited Too acid	0.42	Somewhat limited Too acid Too steep for surface application	0.42 0.00
Ab: Albion-----	50	Very limited Filtering capacity Slope Too acid	1.00 0.37 0.03	Very limited Filtering capacity Slope Too acid	1.00 0.37 0.14	Very limited Too steep for surface application Filtering capacity Too steep for sprinkler application Too acid	1.00 1.00 0.59 0.14
Shellabarger-----	50	Somewhat limited Slope Too acid	0.37 0.11	Somewhat limited Too acid Slope	0.42 0.37	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 0.59 0.42
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Blanket-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
Bb: Blanket-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
BRR: Brewer-----	85	Very limited Restricted permeability	1.00	Very limited Restricted permeability Flooding	1.00 0.40	Very limited Restricted permeability	1.00
Ca: Canadian-----	100	Somewhat limited		Somewhat limited		Somewhat limited	

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cb: Canadian-----	70	Filtering capacity	0.00	Flooding	0.40	Filtering capacity	0.00
				Filtering capacity	0.00		
		Somewhat limited Filtering capacity	0.00	Somewhat limited Flooding	0.40	Somewhat limited Filtering capacity	0.00
				Filtering capacity	0.00		
Waldeck-----	30	Very limited Filtering capacity	1.00	Very limited Flooding	1.00	Very limited Filtering capacity	1.00
		Flooding	0.60	Filtering capacity	1.00	Flooding	0.60
		Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
Cc: Carwile-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Runoff limitation	0.40	Too acid	0.07	Too acid	0.07
		Too acid	0.02				
Cd: Clark-----	75	Not limited		Not limited		Somewhat limited Too steep for surface application	0.00
Ost-----	25	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
						Too steep for surface application	0.00
Ce: Clime-----	100	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
		Droughty	0.80	Droughty	0.80	Droughty	0.80
		Depth to bedrock	0.71	Depth to bedrock	0.71	Depth to bedrock	0.71
						Too steep for surface application	0.31
Ea: Elandco-----	100	Not limited		Somewhat limited Flooding	0.40	Not limited	
Eb: Elandco-----	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
Ec: Elandco-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Fa: Farnum-----	100	Not limited		Not limited		Not limited	
Fb: Farnum-----	100	Not limited		Not limited		Not limited	
Fc: Farnum-----	100	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
Ga: Goessel-----	100	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.86
		Runoff limitation	0.40				
Gb: Goessel-----	100	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.86
		Runoff limitation	0.40				

AGRICULTURAL WASTE MANAGEMENT--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ia: Irwin-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Ib: Irwin-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability Too steep for surface application	1.00 0.31
Ic: Irwin-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability Too steep for surface application	1.00 0.08
INT: Aquolls-----	100	Very limited Depth to saturated zone Low adsorption Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Low adsorption Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Low adsorption Ponding	1.00 1.00 1.00
KAA: Kaski-----	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
La: Lesho-----	100	Somewhat limited Flooding Depth to saturated zone Restricted permeability	0.60 0.43 0.30	Very limited Flooding Depth to saturated zone Restricted permeability	1.00 0.43 0.22	Somewhat limited Flooding Depth to saturated zone Restricted permeability	0.60 0.43 0.22
Lb: Lincoln-----	100	Very limited Flooding Filtering capacity Droughty Leaching limitation	1.00 1.00 0.90 0.45	Very limited Flooding Filtering capacity Droughty	1.00 1.00 0.90	Very limited Flooding Filtering capacity Droughty	1.00 1.00 0.90
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Restricted permeability Too acid	0.30 0.03	Somewhat limited Restricted permeability Too acid	0.22 0.14	Somewhat limited Restricted permeability Too acid	0.22 0.14
Mb: Milan-----	100	Somewhat limited Restricted permeability Too acid	0.30 0.03	Somewhat limited Restricted permeability Too acid	0.22 0.14	Somewhat limited Too steep for surface application Restricted permeability Too acid	0.31 0.22 0.14
Mc: Milan-----	100	Somewhat limited Restricted permeability Too acid	0.30 0.03	Somewhat limited Restricted permeability Too acid	0.22 0.14	Somewhat limited Restricted permeability Too acid Too steep for surface application	0.22 0.14 0.08
Na: Naron-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00
Oc: Wellsford-----	100	Very limited Restricted permeability	1.00	Very limited Droughty	1.00	Very limited Droughty	1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Od: Wellsford-----	60	Depth to bedrock	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Runoff limitation	0.40				
		Very limited Restricted permeability	1.00	Very limited Droughty	1.00	Very limited Droughty	1.00
		Depth to bedrock	1.00	Restricted permeability	1.00	Restricted permeability	1.00
Rock Outcrop-----	40	Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Runoff limitation	0.40			Too steep for surface application	0.91
						Too steep for sprinkler application	0.02
Pa: Pits-----	100	Not rated		Not rated		Not rated	
Pb: Plevna-----	100	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
Pc: Pratt-----	100	Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Runoff limitation	0.40				
Pd: Pratt-----	65	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45			Too steep for surface application	0.08
Tivoli-----	35	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Too steep for surface application	1.00
		Leaching limitation	0.45	Slope	0.04	Filtering capacity	1.00
		Slope	0.04			Too steep for sprinkler application	0.22
Ra: Renfrow-----	100	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Too steep for surface application	1.00
		Filtering capacity	1.00	Filtering capacity	1.00	Too steep for sprinkler application	1.00
		Droughty	0.96	Droughty	0.96	Filtering capacity	1.00
		Leaching limitation	0.45			Droughty	0.96
Rb: Renfrow-----	100	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Rc: Renfrow-----	65	Runoff limitation	0.40			Too steep for surface application	0.08
		Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Wellsford-----	35	Runoff limitation	0.40			Too steep for surface application	0.00
		Very limited		Very limited		Very limited	
		Restricted	1.00	Droughty	1.00	Droughty	1.00
		permeability		Restricted		Restricted	
		Depth to bedrock	1.00	permeability	1.00	Depth to bedrock	1.00
Droughty		Runoff limitation	0.40	Depth to bedrock	1.00	Too steep for surface application	0.00
Rd: Rosehill-----	100	Very limited		Very limited		Very limited	
		Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability		permeability		permeability	
		Droughty	0.88	Droughty	0.88	Droughty	0.88
		Depth to bedrock	0.42	Depth to bedrock	0.42	Depth to bedrock	0.42
Sa: Shellabarger-----	100	Runoff limitation	0.40				
		Somewhat limited		Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42	Too acid	0.42
Sb: Shellabarger-----	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42	Too acid	0.42
						Too steep for surface application	0.31
Sc: Shellabarger-----	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42	Too acid	0.42
						Too steep for surface application	0.31
Ta: Tabler-----	100	Very limited		Very limited		Very limited	
		Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability		permeability		permeability	
		Runoff limitation	0.40				
Tb: Tabler-----	60	Very limited		Very limited		Very limited	
		Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability		permeability		permeability	
		Runoff limitation	0.40				
Drummond-----	40	Very limited		Very limited		Very limited	
		Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability		permeability		permeability	
		Runoff limitation	0.40				
		Salinity	0.01				
Ua: Urban Land-----	70	Not rated		Not rated		Not rated	
Canadian-----	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Filtering	0.00	Filtering	0.00	Filtering	0.00
		capacity		capacity		capacity	
Ub: Urban Land-----	75	Not rated		Not rated		Not rated	
Elandco-----	25	Not limited		Not limited		Not limited	
Uc: Urban Land-----	70	Not rated		Not rated		Not rated	
Farnum-----	30	Not limited		Not limited		Not limited	
Ud: Urban Land-----	70	Not rated		Not rated		Not rated	
Irwin-----	30	Very limited		Very limited		Very limited	
		Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability		permeability		permeability	
		Runoff limitation	0.40				

AGRICULTURAL WASTE MANAGEMENT--Continued
Sedgwick County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ue: Urban Land-----	70	Not rated		Not rated		Not rated	
Tabler-----	30	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Va: Vanoss-----	100	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07	Somewhat limited Too acid	0.07
Vb: Vanoss-----	100	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07	Somewhat limited Too acid	0.07
Vc: Vanoss-----	100	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07	Somewhat limited Too steep for surface application Too acid	0.31 0.07
Vd: Vanoss-----	100	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07	Somewhat limited Too steep for surface application Too acid	0.31 0.07
Ve: Vernon-----	100	Very limited Restricted permeability Runoff limitation Droughty Filtering capacity	1.00 0.40 0.06 0.00	Very limited Restricted permeability Droughty Filtering capacity	1.00 0.06 0.00	Very limited Restricted permeability Droughty Filtering capacity	1.00 0.06 0.00
Vf: Vernon-----	100	Very limited Restricted permeability Runoff limitation Droughty Filtering capacity	1.00 0.40 0.06 0.00	Very limited Restricted permeability Droughty Filtering capacity	1.00 0.06 0.00	Very limited Restricted permeability Too steep for surface application Droughty Filtering capacity	1.00 0.31 0.06 0.00
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43	Very limited Flooding Filtering capacity Depth to saturated zone	1.00 1.00 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43
Wb: Waurika-----	100	Very limited Restricted permeability Depth to saturated zone Runoff limitation	1.00 1.00 0.40	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Restricted permeability Depth to saturated zone	1.00 1.00

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Sedgwick County, Kansas: KS173

							SPISP II Ratings		
							Leaching	Solution	Adsorbed
MUSYM/SEQ#	COMPONENT/TEXTURE/MU%	HYD	KFACT	SURFACE DEPTH	% OM	(SLP)	Runoff (SSRP)	Runoff (SARP)	
015LS 1	LADYSMITH SICL 90%	D	0.37	7"	3.0%	H (w)	H	H	
079CR 1	CRETE SIL 100%	C	0.37	5"	3.0%	L	H	H	
079CT 1	CRETE SIL 100%	C	0.37	5"	3.0%	L	H	H	
079DE 1	DETROIT SICL 100%	C	0.37	11"	3.0%	L	H	H	
079DU 1	DRUMMOND L 100%	D	0.49	9"	0.8%	H (w)	H	H	
079FA 1	FARNUM FSL 100%	B	0.20	14"	1.5%	I	I	I	
079FE 1	FARNUM L 100%	B	0.28	11"	2.0%	I	I	I	
079GD 1	GEARY SIL 100%	B	0.32	9"	2.5%	I	I	I	
079KA 1	KASKI L 100%	B	0.28	24"	2.0%	L	I	I	
079LA 1	LADYSMITH SICL 100%	D	0.37	10"	3.0%	V	H	H	
079LB 1	LADYSMITH SICL 100%	D	0.37	10"	3.0%	V	H	H	
079SM 1	SMOLAN SICL 90%	C	0.37	8"	3.0%	L	H	H	
095AD 1	ALBION SL 100%	B	0.20	8"	1.5%	H	I	I	
095LA 1	LINCOLN LFS 100%	A	0.17	10"	0.5%	H	L	L	
095WA 1	WALDECK FSL 100%	C	0.20	25"	1.5%	H (w)	H	I	
1011 1	ALBION SL 70%	B	0.20	9"	1.5%	H	I	I	
1011 2	SHELLABARGER SL 30%	B	0.20	7"	1.5%	H	I	I	
1070 1	AVANS L 100%	B	0.37	5"	2.0%	I	I	I	
1071 1	AVANS L 85%	B	0.37	5"	2.0%	I	I	I	
1072 1	AVANS L 85%	B	0.37	5"	2.0%	I	I	I	
191BA 1	BETHANY SIL 100%	C	0.37	6"	2.0%	L	H	H	
191BB 1	BETHANY SIL 100%	C	0.37	6"	2.0%	L	H	H	
191DR 1	DALE SIL 50%	B	0.37	21"	2.0%	I	I	I	
191DR 2	REINACH SIL 50%	B	0.37	80"	2.0%	L	I	I	
191EA 1	ELANDCO SIL 100%	B	0.43	40"	2.0%	L	I	I	
191LO 1	LESHO CL 100%	C	0.28	18"	2.0%	H (w)	H	H	
2204 1	JAMASH CL 50%	D	0.37	4"	2.0%	V	H	H	
2204 2	PIEDMONT CL 50%	D	0.37	4"	2.0%	V	H	H	

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Sedgwick County, Kansas: KS173

2205 1	JAMASH CL 60%	D	0.37	4"	2.0% V	H	H
2205 2	PIEDMONT CL 40%	D	0.37	4"	2.0% V	H	H
2207 1	JAMASH CL 80%	D	0.37	4"	2.0% V	H	H
2381 1	KANZA SL 50%	D	0.20	4"	2.0% H (w)	H	H
2381 2	NINNESCAH SL 50%	B	0.20	6"	2.5% H (w)	I	I
2587 1	IMANO CL 85%	C	0.28	10"	2.0% H (w)	H	H
2948 1	NALIM L 80%	B	0.28	6"	2.0% I	I	I
3052 1	OST L 55%	B	0.28	8"	2.0% I	I	I
3052 2	CLARK L 45%	B	0.28	11"	1.5% I	I	I
3170 1	PENALOSA SIL 100%	C	0.37	5"	2.0% L	H	H
3171 1	PENALOSA SIL 100%	C	0.37	5"	2.0% L	H	H
3535 1	SHELLABARGER SL 55%	B	0.20	7"	1.5% H	I	I
3535 2	NALIM L 45%	B	0.28	6"	2.0% I	I	I
3639 1	TAVER L 90%	D	0.28	7"	2.0% V	H	H
3966 1	WILLOWBROOK FSL 90%	B	0.20	4"	1.5% H (w)	I	I
4004 1	YAGGY FSL 95%	C	0.20	5"	0.8% H (w)	H	I
Aa 1	ALBION SL 70%	B	0.20	9"	1.5% H	I	I
Aa 2	SHELLABARGER SL 30%	B	0.20	15"	1.5% I	I	I
Ab 1	ALBION SL 50%	B	0.20	9"	1.5% H	I	I
Ab 2	SHELLABARGER SL 50%	B	0.20	15"	1.5% I	I	I
AED 1	ARENTS, EARTHEN DAM 100%		0.00	0"	0.0% ?	?	?
Ba 1	BLANKET SIL 100%	C	0.37	14"	2.0% L	H	H
Bb 1	BLANKET SIL 100%	C	0.37	14"	2.0% L	H	H
BRR 1	BREWER SICL 85%	C	0.37	14"	2.0% L	H	H
Ca 1	CANADIAN FSL 100%	B	0.20	20"	2.0% I	I	I
Cb 1	CANADIAN FSL 70%	B	0.20	20"	2.0% I	I	I
Cb 2	WALDECK FSL 30%	C	0.20	14"	1.5% H (w)	H	I
Cc 1	CARWILE FSL 100%	D	0.24	18"	2.0% H (w)	H	H
Cd 1	CLARK CL 75%	B	0.28	11"	1.5% I	I	I
Cd 2	OST CL 25%	B	0.32	7"	2.0% I	I	I

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Sedgwick County, Kansas: KS173

Ce 1	CLIME SIC 100%	C	0.28	9"	2.5% L	H	H
Ea 1	ELANDCO SIL 100%	B	0.43	40"	2.0% L	I	I
Eb 1	ELANDCO SIL 100%	B	0.43	40"	2.0% L	I	I
Ec 1	ELANDCO SIL 100%	B	0.43	40"	2.0% L	I	I
Fa 1	FARNUM L 100%	B	0.28	14"	2.0% I	I	I
Fb 1	FARNUM L 100%	B	0.28	14"	2.0% I	I	I
Fc 1	FARNUM L 100%	B	0.28	14"	2.0% I	I	I
Ga 1	GOESSEL SIC 100%	D	0.28	5"	2.5% H (w)	H	H
Gb 1	GOESSEL SIC 100%	D	0.28	5"	2.5% H (w)	H	H
Ia 1	IRWIN SICL 100%	D	0.32	13"	3.0% V	H	H
Ib 1	IRWIN SICL 100%	D	0.32	13"	3.0% V	H	H
Ic 1	IRWIN SICL 100%	D	0.32	6"	3.0% V	H	H
INT 1	AQUOLLS VAR 100%	C	0.00	72"	0.0% ?	H	?
KAA 1	KASKI L 100%	B	0.28	24"	2.0% L	I	I
La 1	LESHO L 100%	C	0.28	10"	2.0% H (w)	H	H
Lb 1	LINCOLN FSL 100%	A	0.20	8"	0.5% H	L	L
M-W 1	MISCELLANEOUS WATER 100%		0.00	0"	0.0% ?	?	?
Ma 1	MILAN L 100%	B	0.28	11"	2.0% I	I	I
Mb 1	MILAN L 100%	B	0.28	11"	2.0% I	I	I
Mc 1	MILAN CL 100%	B	0.28	6"	2.0% I	I	I
Na 1	NARON FSL 100%	B	0.20	8"	2.0% I	I	I
Oc 1	WELLSFORD CL 100%	D	0.32	7"	1.3% V	H	H
Od 1	WELLSFORD CL 60%	D	0.32	7"	1.3% V	H	H
Od 2	ROCK OUTCROP 40%	D	0.00	0"	0.0% V	H	L
Pa 1	PITS 100%		0.00	0"	0.0% ?	?	?
Pb 1	PLEVNA FSL 100%	D	0.20	9"	2.5% H (w)	H	H
Pc 1	PRATT LFS 100%	A	0.17	18"	0.8% H	L	L
Pd 1	PRATT LFS 65%	A	0.17	18"	0.8% H	L	L
Pd 2	TIVOLI LFS 35%	A	0.17	10"	0.5% H	L	I (s)
Ra 1	RENFROW SICL 100%	D	0.43	9"	2.0% V	H	H

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Sedgwick County, Kansas: KS173

Rb 1	RENFROW SICL 100%	D	0.43	9"	2.0% V	H	H
Rc 1	RENFROW CL 65%	D	0.43	9"	2.0% V	H	H
Rc 2	WELLSFORD CL 35%	D	0.32	7"	1.3% V	H	H
Rd 1	ROSEHILL SIC 100%	D	0.28	8"	2.0% V	H	H
Sa 1	SHELLABARGER SL 100%	B	0.20	15"	1.5% I	I	I
Sb 1	SHELLABARGER SL 100%	B	0.20	15"	1.5% I	I	I
Sc 1	SHELLABARGER SL 100%	B	0.20	15"	1.5% I	I	I
Ta 1	TABLER SICL 100%	D	0.43	9"	2.0% V	H	H
Tb 1	TABLER SIL 60%	D	0.49	9"	2.0% V	H	H
Tb 2	DRUMMOND SIL 40%	D	0.49	8"	0.8% H (w)	H	H
Ua 1	URBAN LAND 70%		0.00	0"	0.0% ?	?	?
Ua 2	CANADIAN FSL 30%	B	0.20	20"	2.0% I	I	I
Ub 1	URBAN LAND 75%		0.00	0"	0.0% ?	?	?
Ub 2	ELANDCO SIL 25%	B	0.43	40"	2.0% L	I	I
Uc 1	URBAN LAND 70%		0.00	0"	0.0% ?	?	?
Uc 2	FARNUM L 30%	B	0.28	14"	2.0% I	I	I
Ud 1	URBAN LAND 70%		0.00	0"	0.0% ?	?	?
Ud 2	IRWIN SICL 30%	D	0.32	13"	3.0% V	H	H
Ue 1	URBAN LAND 70%		0.00	0"	0.0% ?	?	?
Ue 2	TABLER SICL 30%	D	0.43	9"	2.0% V	H	H
Va 1	VANOSS SIL 100%	B	0.37	13"	2.0% I	I	I
Vb 1	VANOSS SIL 100%	B	0.37	13"	2.0% I	I	I
Vc 1	VANOSS SIL 100%	B	0.37	13"	2.0% I	I	I
Vd 1	VANOSS SIL 100%	B	0.37	7"	2.0% I	I	I
Ve 1	VERNON SL 100%	D	0.20	8"	1.3% V	H	H
Vf 1	VERNON SL 100%	D	0.20	8"	1.3% V	H	H
W 1	WATER 100%		0.00	0"	0.0% ?	?	?
Wa 1	WALDECK SL 100%	C	0.20	14"	1.5% H (w)	H	I
Wb 1	WAURIKA SIL 100%	D	0.49	15"	2.0% H (w)	H	H

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H -- High
I -- Intermediate
L -- Low
V -- Very Low

Conditions that affect ratings:

m -- There are macropores in the surface horizon deeper than 24"
w -- The high water table comes within 24" of the surface during the growing season
s -- The field slope is greater than 15%

SPISP II S-Ratings:

SLP -- Soil Leaching Potential
SSRP -- Soil Solution Runoff Potential
SARP -- Soil Adsorbed Runoff Potential

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Sedgwick County, Kansas

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All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
015LS: LADYSMITH SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	LADYSMITH	No	ridge	---	---	---	---
079CR: CRETE SILT LOAM, 0 TO 1 PERCENT SLOPES	Unnamed wet soils	Yes	drainageway	2A,3,4,2B3	YES	YES	YES
	CRETE	No	---	---	---	---	---
079CT: CRETE SILT LOAM, 1 TO 3 PERCENT SLOPES	CRETE	No	hillslope	---	---	---	---
	Unnamed Wet Soils	Yes	depression	2A,3,2B3	YES	NO	YES
079DE: DETROIT SILTY CLAY LOAM, RARELY FLOODED	DETROIT	No	flood plain	---	---	---	---
079DU: DRUMMOND COMPLEX, 0 TO 1 PERCENT SLOPES	DRUMMOND	No	terrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	UNNAMED HYDRIC SOILS	Yes	drainageway	3,2B3,2A	YES	NO	YES
079FA: FARNUM FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
079FE: FARNUM LOAM, 3 TO 6 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
079GD: GEARY SILT LOAM, 1 TO 3 PERCENT SLOPES	GEARY	No	hillslope	---	---	---	---
079KA: KASKI LOAM, OCCASIONALLY FLOODED	KASKI	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO
079LA: LADYSMITH SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES	LADYSMITH	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,3,4,2B3	YES	YES	YES
079LB: LADYSMITH SILTY CLAY LOAM, 1 TO 2 PERCENT SLOPES	LADYSMITH	No	paleoterrace	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	2A,3,2B3	YES	NO	YES
079SM: SMOLAN SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES	SMOLAN	No	hillslope	---	---	---	---
	LABETTE	No	hillslope	---	---	---	---
	NORGE	No	hillslope	---	---	---	---
095AD: ALBION SANDY LOAM, 6 TO 15 PERCENT SLOPES	ALBION	No	paleoterrace	---	---	---	---
095LA: LINCOLN LOAMY SAND, OCCASIONALLY FLOODED	LINCOLN	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3,2B2	YES	NO	NO
095WA: WALDECK FINE SANDY LOAM, OCCASIONALLY FLOODED	WALDECK	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	depression	3,2A,2B3	YES	NO	YES
191BA: BETHANY SILT LOAM, 0 TO 1 PERCENT SLOPES	BETHANY	No	paleoterrace	---	---	---	---
191BB: BETHANY SILT LOAM, 1 TO 3 PERCENT SLOPES	BETHANY	No	paleoterrace	---	---	---	---
191DR: DALE AND REINACH SILT LOAMS, RARELY FLOODED	DALE	No	flood plain	---	---	---	---
	REINACH	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
191EA: ELANDCO SILTY CLAY LOAM, RARELY FLOODED	ELANDCO	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	3,2A	YES	NO	YES
	Unnamed wet soils	Yes	drainageway	2A,2B3,4	YES	YES	NO
191LO: LESHO CLAY LOAM, OCCASIONALLY FLOODED	LESHO	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO
1011: ALBION-SHELLABARGER SANDY LOAMS, 1 TO 3 PERCENT SLOPES	ALBION	No	paleoterrace	---	---	---	---
	SHELLABARGER Unnamed Wet Soils	No Yes	paleoterrace drainageway	2A,2B1,2B2,2B3	YES	NO	NO
1070: AVANS LOAM, 0 TO 1 PERCENT SLOPES	AVANS	No	paleoterrace	---	---	---	---
	Unnamed Wet Soils	Yes	depression, drainageway	2A,3,2B3	YES	NO	YES
1071: AVANS LOAM, 1 TO 3 PERCENT SLOPES	AVANS	No	paleoterrace	---	---	---	---
	OST Unnamed Wet Soils	No Yes	paleoterrace depression, drainageway	2A,3,2B3	YES	NO	YES
1072: AVANS LOAM, 3 TO 7 PERCENT SLOPES	AVANS	No	paleoterrace	---	---	---	---
	OST Unnamed Wet Soils	No Yes	paleoterrace drainageway	2A,3,2B3,4	YES	YES	YES
2204: JAMASH-PIEDMONT CLAY LOAMS, 0 TO 1 PERCENT SLOPES	JAMASH	No	pediment	---	---	---	---
	PIEDMONT Unnamed Wet Soils	No Yes	pediment drainageway	2B3,4	YES	YES	NO
2205: JAMASH-PIEDMONT CLAY LOAMS, 1 TO 3 PERCENT SLOPES	JAMASH	No	pediment	---	---	---	---
	PIEDMONT Unnamed Wet Soils	No Yes	pediment drainageway	2B3,4	YES	YES	NO
2207: JAMASH CLAY LOAM, 0 TO 8 PERCENT SLOPES	JAMASH	No	pediment	---	---	---	---
	PIEDMONT Unnamed Wet Soils	No Yes	pediment drainageway	2B3,4	YES	YES	NO
2381: KANZA-NINNESCAH SANDY LOAMS, 0 TO 2 PERCENT SLOPES, COMMONLY FLOODED	KANZA	Yes	flood plain	2B3	YES	NO	NO
	NINNESCAH	Yes	flood plain	2B3	YES	NO	NO
2587: IMANO CLAY LOAM, 0 TO 1 PERCENT SLOPES, OCCASIONALLY FLOODED	IMANO	No	flood plain	---	---	---	---
	WILLOWBROOK	No	flood plain	---	---	---	---
	KANZA	Yes	flood plain	2B3	YES	NO	NO
2948: NALIM LOAM, 0 TO 1 PERCENT SLOPES	NINNESCAH	Yes	flood plain	2B3	YES	NO	NO
	NALIM	No	paleoterrace	---	---	---	---
	FARNUM Unnamed Wet Soils	No Yes	paleoterrace depression	2B3,3	YES	NO	YES
3052: OST-CLARK LOAMS, 1 TO 3 PERCENT SLOPES	OST	No	paleoterrace	---	---	---	---
	CLARK Unnamed Wet Soils	No Yes	paleoterrace drainageway	2A,2B1,2B2	YES	NO	NO

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
3170: PENALOSA SILT LOAM, 0 TO 1 PERCENT SLOPES	PENALOSA	No	paleoterrace	---	---	---	---
	CARBIKA	Yes	depression, interdune, paleoterrace	3,2B3	YES	NO	YES
3171: PENALOSA SILT LOAM, 1 TO 3 PERCENT SLOPES	PENALOSA	No	paleoterrace	---	---	---	---
	Unnamed Wet Soils	Yes	drainageway	2B3,3	YES	NO	YES
3535: SHELLABARGER-NALIM COMPLEX, 1 TO 3 PERCENT SLOPES	SHELLABARGER	No	paleoterrace	---	---	---	---
	NALIM Unnamed Wet Soils	Yes	paleoterrace depression, drainageway	2A,3,2B3,4	YES	YES	YES
3639: TAVER LOAM, 0 TO 1 PERCENT SLOPES	TAVER	No	paleoterrace	---	---	---	---
	SALTCREEK	No	dune, paleoterrace	---	---	---	---
	CARBIKA	Yes	depression, interdune, paleoterrace	2B3,3	YES	NO	YES
3966: WILLOWBROOK FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES, OCCASIONALLY FLOODED	WILLOWBROOK	No	flood plain	---	---	---	---
	NICKERSON	No	terrace	---	---	---	---
	KANZA	Yes	flood plain	2B3	YES	NO	NO
	NINNESCAH	Yes	flood plain	2B3	YES	NO	NO
4004: YAGGY FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	YAGGY	No	flood plain	---	---	---	---
	IMANO	No	flood plain	---	---	---	---
	KANZA	Yes	flood plain	2B3	YES	NO	NO
	NINNESCAH	Yes	flood plain	2B3	YES	NO	NO
Aa: ALBION-SHELLABARGER SANDY LOAMS, 1 TO 4 PERCENT SLOPES	ALBION	No	paleoterrace	---	---	---	---
	SHELLABARGER Unnamed wet soils	Yes	paleoterrace drainageway	2A,2B3	YES	NO	NO
Ab: ALBION AND SHELLABARGER SANDY LOAMS, 7 TO 15 PERCENT SLOPES	ALBION	No	paleoterrace	---	---	---	---
	SHELLABARGER Unnamed wet soils	Yes	paleoterrace drainageway	2A,2B3	YES	NO	NO
AED: ARENTS, EARTHEN DAM	ARENTS, EARTHEN DAM	Unranked	---	---	---	---	---
Ba: BLANKET SILT LOAM, 0 TO 1 PERCENT SLOPES	BLANKET	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	3,2A,2B3,4	YES	YES	YES
Bb: BLANKET SILT LOAM, 1 TO 3 PERCENT SLOPES	BLANKET	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3,4,3	YES	YES	YES
BRR: BREWER SILTY CLAY LOAM, RARELY FLOODED	BREWER	No	flood plain	---	---	---	---
	OSAGE VERDIGRIS	Yes No	flood plain flood plain	2B3 ---	YES ---	NO ---	NO ---
Ca: CANADIAN FINE SANDY LOAM, RARELY FLOODED	CANADIAN	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,2B3,4	YES	YES	NO

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Cb: CANADIAN-WALDECK FINE SANDY LOAMS, RARELY FLOODED	CANADIAN	No	flood plain	---	---	---	---
	WALDECK Unnamed wet soils	No Yes	flood plain drainageway	--- 2B3,4,2A	--- YES	--- YES	--- NO
Cc: CARWILE FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2B3,2A,3	YES	NO	YES
Cd: CLARK-OST CLAY LOAMS, 1 TO 4 PERCENT SLOPES	CLARK	No	paleoterrace	---	---	---	---
	OST	No	paleoterrace	---	---	---	---
Ce: CLIME SILTY CLAY, 3 TO 6 PERCENT SLOPES	CLIME	No	hillslope	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	2A,3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2B3,2A,3	YES	NO	YES
Ea: ELANDCO SILT LOAM, RARELY FLOODED	ELANDCO	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2A,3	YES	NO	YES
	Unnamed wet soils	Yes	drainageway	2A,2B3,4	YES	YES	NO
Eb: ELANDCO SILT LOAM, OCCASIONALLY FLOODED	ELANDCO	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	3,2B3,4,2A	YES	YES	YES
Ec: ELANDCO SILT LOAM, FREQUENTLY FLOODED	ELANDCO	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3,3,4	YES	YES	YES
Fa: FARNUM LOAM, 0 TO 1 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,2B3,3,4	YES	YES	YES
Fb: FARNUM LOAM, 1 TO 3 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,2B3,3,4	YES	YES	YES
Fc: FARNUM LOAM, SANDY SUBSTRATUM, 0 TO 1 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,2B3,3,4	YES	YES	YES
Ga: GOESSEL SILTY CLAY, 0 TO 1 PERCENT SLOPES	GOESSEL	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2B3,3	YES	NO	YES
Gb: GOESSEL SILTY CLAY, 1 TO 2 PERCENT SLOPES	GOESSEL	No	paleoterrace	---	---	---	---
Ia: IRWIN SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES	IRWIN	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2B3,4	YES	YES	NO
Ib: IRWIN SILTY CLAY LOAM, 3 TO 6 PERCENT SLOPES	IRWIN	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO
Ic: IRWIN SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES, ERODED	IRWIN	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
INT: AQUOLLS	AQUOLLS	Yes	depression, terrace	2B3,3	YES	NO	YES
KAA: KASKI LOAM, OCCASIONALLY FLOODED	KASKI	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO
La: LESHO LOAM, OCCASIONALLY FLOODED	LESHO	No	flood plain	---	---	---	---
	PLEVNA UNNAMED HYDRIC SOILS	Yes Yes	flood plain drainageway	2B3 2B3,4,3	YES YES	NO YES	NO YES
Lb: LINCOLN SOILS, FREQUENTLY FLOODED	LINCOLN	No	flood plain	---	---	---	---
	PLEVNA UNNAMED HYDRIC SOILS	Yes Yes	flood plain depression	2B3 3,2B3	YES YES	NO NO	NO YES
	Unnamed wet soils	Yes	drainageway	4,2B3,3	YES	YES	YES
M-W: MISCELLANEOUS WATER	MISCELLANEOUS WATER	Unranked	---	---	---	---	---
Ma: MILAN LOAM, 1 TO 3 PERCENT SLOPES	MILAN	No	paleoterrace	---	---	---	---
Mb: MILAN LOAM, 3 TO 6 PERCENT SLOPES	MILAN	No	paleoterrace	---	---	---	---
Mc: MILAN CLAY LOAM, 2 TO 6 PERCENT SLOPES, ERODED	MILAN	No	paleoterrace	---	---	---	---
Na: NARON FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES	NARON	No	dune, paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2B3,4,2A	YES	YES	NO
Oc: WELLSFORD CLAY LOAM, 1 TO 3 PERCENT SLOPES	WELLSFORD	No	pediment	---	---	---	---
Od: WELLSFORD-ROCK OUTCROP COMPLEX, 3 TO 10 PERCENT SLOPES	WELLSFORD	No	pediment	---	---	---	---
	ROCK OUTCROP Unnamed wet soils	Unranked Yes	--- drainageway	--- 2B3,4,2A	--- YES	--- YES	--- NO
Pa: PITS	PITS	No	---	---	---	---	---
Pb: PLEVNA FINE SANDY LOAM, FREQUENTLY FLOODED	PLEVNA	Yes	flood plain	2B3,4	YES	YES	NO
	Unnamed wet soils	Yes	drainageway	2A,2B3,3	YES	NO	YES
Pc: PRATT LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,2B3,3,2B 2	YES	NO	YES
Pd: PRATT-TIVOLI COMPLEX, 5 TO 30 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	TIVOLI	No	dune, paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,2B2,2B3, 3	YES	NO	YES
Ra: RENFROW SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES	RENFROW	No	hillslope	---	---	---	---
Rb: RENFROW SILTY CLAY LOAM, 3 TO 6 PERCENT SLOPES	RENFROW	No	hillslope	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Rc: RENFROW-WELLSFORD CLAY LOAMS, 1 TO 4 PERCENT SLOPES	RENFROW	No	hillslope	---	---	---	---
	WELLSFORD	No	pediment	---	---	---	---
Rd: ROSEHILL SILTY CLAY, 1 TO 3 PERCENT SLOPES	ROSEHILL	No	hillslope	---	---	---	---
Sa: SHELLABARGER SANDY LOAM, 1 TO 3 PERCENT SLOPES	SHELLABARGER	No	paleoterrace	---	---	---	---
Sb: SHELLABARGER SANDY LOAM, 3 TO 6 PERCENT SLOPES	SHELLABARGER	No	paleoterrace	---	---	---	---
Sc: SHELLABARGER SANDY LOAM, 3 TO 6 PERCENT SLOPES, ERODED	SHELLABARGER	No	paleoterrace	---	---	---	---
Ta: TABLER SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES	TABLER	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	3, 2B3, 4, 2A	YES	YES	YES
Tb: TABLER-DRUMMOND COMPLEX, 0 TO 1 PERCENT SLOPES	TABLER	No	paleoterrace	---	---	---	---
	DRUMMOND CARWILE	No Yes	terrace depression, paleoterrace	--- 2A	--- YES	--- NO	--- NO
	Unnamed wet soils	Yes	drainageway	2B3, 4, 3	YES	YES	YES
Ua: URBAN LAND-CANADIAN COMPLEX, 0 TO 3 PERCENT SLOPES	URBAN LAND	Unranked	---	---	---	---	---
	CANADIAN	No	flood plain	---	---	---	---
Ub: URBAN LAND-ELANDCO COMPLEX, 0 TO 1 PERCENT SLOPES	URBAN LAND	Unranked	---	---	---	---	---
	ELANDCO	No	flood plain	---	---	---	---
Uc: URBAN LAND-FARNUM COMPLEX, 0 TO 3 PERCENT SLOPES	URBAN LAND	Unranked	---	---	---	---	---
	FARNUM	No	paleoterrace	---	---	---	---
Ud: URBAN LAND-IRWIN COMPLEX, 1 TO 3 PERCENT SLOPES	URBAN LAND	Unranked	---	---	---	---	---
	IRWIN	No	paleoterrace	---	---	---	---
Ue: URBAN LAND-TABLER COMPLEX, 0 TO 1 PERCENT SLOPES	URBAN LAND	Unranked	---	---	---	---	---
	TABLER	No	paleoterrace	---	---	---	---
Va: VANOSS SILT LOAM, 0 TO 1 PERCENT SLOPES	VANOSS	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A, 2B3, 4, 3	YES	YES	YES
Vb: VANOSS SILT LOAM, 1 TO 3 PERCENT SLOPES	VANOSS	No	paleoterrace	---	---	---	---
Vc: VANOSS SILT LOAM, 3 TO 6 PERCENT SLOPES	VANOSS	No	paleoterrace	---	---	---	---
Vd: VANOSS SILT LOAM, 3 TO 6 PERCENT SLOPES, ERODED	VANOSS	No	paleoterrace	---	---	---	---
Ve: VERNON SANDY LOAM, 1 TO 3 PERCENT SLOPES	VERNON	No	hillslope	---	---	---	---
Vf: VERNON SANDY LOAM, 3 TO 6 PERCENT SLOPES	VERNON	No	hillslope	---	---	---	---
W: WATER	WATER	Yes	---	4, 3	NO	YES	YES

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Wa: WALDECK SANDY LOAM, OCCASIONALLY FLOODED	WALDECK	No	flood plain	---	---	---	---
	PLEVNA	Yes	flood plain	2B3	YES	NO	NO
	Unnamed wet soils	Yes	depression	3,2B3	YES	NO	YES
	WLAURIKA	No	depression,	---	---	---	---
Wb: WAURIKA SILT LOAM, 0 TO 1 PERCENT SLOPES	WLAURIKA	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.
Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:
 - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils
 - (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
 - (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
3. Soils that are frequently ponded for long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.