

Soil Type Explanations

Broome County Soil & Water Conservation District

AcA Alden and Chippewa soils (0-3% slopes). This soil unit contains both the very poorly drained Alden and poorly drained Chippewa soils. The Alden is in the wettest part of the depression and is surrounded by the Cheppewa soil. Most areas of this unit are too wet for any cultivation, and are rather difficult to adequately drain.

Ad Alluvial Land. A miscellaneous land type that consists of narrow strips of first bottom or small terrace remnants, variable texture drainage and reaction. Used mainly as permanent pasture, since use is strongly restricted by small size or irregular shape of the area or by poor drainage. Slope gradients are level or gentle.

ArD Arnot channery silt loam (0-25% slopes). This soil is 10 to 20 inches thick over sandstone bedrock. Rock outcrops usually occur. Usually this soil is well drained with quick removal of surface water. The thin layer of soil material contains a large amount of flat stone fragments. Slopes vary from gentle to moderately steep.

Br Braceville gravelly silt loam. This soil is deep moderately well drained and medium textured. It occupies nearly level and slightly depressed areas on gravelly outwash stream terraces and the lower ends of alluvial fans. Unlimed it is medium to strongly acid. Permeability is rapid in the surface and subsoil and variable in the substratum. The available water capacity is moderate. Natural fertility is low. This soil

is suitable for row crops, hayland, pasture and woodland. A slight wetness delays planting but does not restrict choice of crops. These soils may be improved by drainage.

CaB Canaseraga silt loam (3-8% slopes). This soil is well drained to moderately well drained, and is gently sloping. It formed in areas where about 2 to 3 feet of stone free silts mantle dense glacial till. Permeability is moderate to about 30 inch depths, below that it is slow. The silt mantle sediments are very erodible.

CaC Canaseraga silt loam (8-15% slopes). This soil is well drained to moderately well drained, and is moderately sloping. It formed in areas where about 2 to 3 feet of stone free silts mantle dense glacial till. Permeability is moderate to about 30 inch depths, below that it is slow. The silt mantle sediments are very erodible.

CcC Cattaraugus channery silt loam (15-25% slopes). Deep, well drained, strongly acid soil, with distinctly developed fragipan at 18 to 24 inches that restricts downward movement of both water and roots. Soil is developed in compact glacial till derived from local shale and sandstone rocks. Many fragments of the local rock are scattered over the surface and mixed with soil material. The landscape is a moderately sloping hill crest or upper side slope. Principal limiting factors are strong acidity, impervious subsoil, and susceptibility to erosion.

CcD Cattaraugus channery silt loam (15-25% slopes). This soil is deep, well drained and medium textured. A dense layer called a fragipan occurs at 26 to 40 inches. It

occupies moderately steep areas of glacial till in the uplands. It is very strongly acid to medium acid. Permeability is moderate above the fragipan but very low in the fragipan. Natural fertility is low. The steepness of slope limits the choice of crops that can be grown. It is best suited to pasture and woodland. Erosion is a hazard when this soil is plowed. Farm machinery is hazardous to operate on these slopes.

CcE Cattaraugus channery silt loam (25-35% slopes). This soil is deep well drained and medium textured. A dense layer called a fragipan layer occurs at 26 to 40 inches. It occupies steep areas of glacial till on the valley walls in the uplands. It is very strongly acid to medium acid. Permeability is moderate above the fragipan but slow to very slow in the fragipan. Available water capacity is moderate above the fragipan but very low in the fragipan. Natural fertility is low. The steep slopes limit the use of this soil to woodland, pasture, and wildlife. Where cover is disturbed erosion is severe.

ChA Chenango and Howard gravelly loams (0-5% slopes). This soil is deep and well to somewhat excessively drained and gravelly. It occupies nearly level glacial outwash plains and stream terraces. Unlimed it is medium to strongly acid. Permeability is moderate to rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. Natural fertility is low. This soil is suitable for a wide range of crops, hay, and pasture. The main problems are fertility and low pH. Vegetable crops may need irrigation. Small stones and gravel may interfere with cultivation and with harvesting equipment. Some areas are used as a source of gravel.

ChC Chenango and Howard gravelly loams (5-15% slopes). This soil is deep, well drained to somewhat excessively drained and medium textured. It occupies moderately sloping rolling areas and moderately sloping knolls that slope in many directions. It occurs mainly on dissected glacial outwash terraces in the valleys and rolling areas in the uplands. The unlimed solum is medium acid to neutral. Permeability is moderate to rapid in the solum and very rapid in the substratum. The available water capacity is moderate in the rooting zone. Natural fertility is medium. The complex slopes make intensive cropping difficult, consequently most of this soil is best suited for hay, pasture, or woodland. The main limitation is an erosion hazard on the steeper slope when cultivated. The complex topography and short slope make erosion control difficult.

ChD Chenango and Howard gravelly loams (15-25% slopes) This soil is deep, well drained to somewhat excessively drained and medium textured. It occupies moderately steep areas of glacial outwash terraces and hilly areas in the uplands. The unlimed solum is medium acid to neutral. Permeability is moderate to rapid in the solum and very rapid in the substratum. The available water capacity is moderate in the rooting zone. Natural fertility is medium. This soil is best suited to hay, pasture, or woodland. The steepness of slope, and erosion hazard if cultivated and a tendency to be droughty. Most of this soil is pastured or in woodland.

ChE Chenango and Howard gravelly loams (25-40% slopes). This soil is deep, well drained to somewhat excessively drained and medium textured. It occupies steep and very steep areas on valley walls and steep slopes along streams. The unlimed solum is

medium acid to neutral. Permeability is moderate to rapid in the solum and very rapid in the substratum. The available water capacity is moderate in the rooting zone. Natural fertility is medium. The steepness of slope makes this soil best suited to woodland or native pasture. The severe erosion hazard and droughtiness also limit its use.

CpB Chippewa channery silt loam (3-8% slope). This is a deep, poorly drained soil in dense glacial till. It is on foot-slope landscapes where surface runoff accumulates. However, on these gentle slopes, the surface water does not pond but continues to seep on down slope. The subsoil is very slowly permeable.

CuB Culvers channery silt loam (2-8% slope). This is a moderately well drained loamy soil formed in compact, reddish colored glacial till. The landscape is nearly level or gently sloping. Permeability in the upper 2 feet is moderate, below it is slow. This soil contains a moderate amount of angular stone fragments. Commonly bedrock is encountered at depths of 4 to 12 feet. This, and some seasonal surface wetness are the main items to consider in the use of this soil.

CuC Culvers channery silt loam (8-15% slope). This is a moderately well drained, loamy soil formed in compact, reddish colored glacial till. The landscapes are sloping, side hill areas. Permeability in the upper 2 feet is moderate, below this it is slow. The soil contains a moderate amount of angular stone fragments. Commonly bedrock is encountered at depths of 4 to 12 feet. This and some seasonal surface wetness are the main features of this soil.

CuD Culvers channery silt loam (15-25% slope). This is a moderately well drained, loamy soil formed in compact, reddish colored glacial till. The landscape is a moderately steep plateau side slope. Permeability is moderate in the upper 2 feet, below that it is slow. This soil contains a moderate amount of angular stone fragments. Commonly bedrock is encountered at depths of 4 to 12 feet.

Cv Cut and fill lands, gravelly materials. This land type consists of fill that came from sandy and gravelly soils. Slopes are variable. The area is usually not suitable for agriculture.

Cw Cut and fill lands, loamy materials. This land type consists of fill that is from loamy glacial till sediments. Slopes are variable. The area is usually not suitable for agriculture.

Cy Cut and fill lands, silty materials. These are areas that have been filled with alluvial or bottom land sediments. Usually these areas are not used for agriculture.

DaB Dalton silt loam (2-8% slopes). This soil is somewhat poorly drained and is gently sloping. It formed in areas where about 2 to 3 feet of stone free silts mantle glacial till. Permeability is moderate to slow. This soil is very acid and erodible.

DaC Dalton silt loam (8-15% slopes). This somewhat poorly drained soil is on sloping toe slope areas. It has about 2 to 3 feet of stone free silts over glacial till. Permeability is usually moderate to slow. Besides being seepy, this soil is acid and very erodible.

LdB Lordstown channery silt loam (0-5% slopes). This is a moderately deep, well drained, medium textured soil. It occupies gently sloping areas of glacial till on the higher ridges and hilltops. Unlimed it is strongly acid. Bedrock occurs at 10 to 40 inches below this soil. Permeability is moderate. The available water capacity is moderate. Natural fertility is low. This soil is suited for crops, hay, pasture or woodland. The main problems are depth due to bedrock, moderate permeability and the shorter growing season due to elevation.

LdC Lordstown channery silt loam (5-15% slopes). This is a moderately deep, well drained, medium textured soil. It occupies sloping areas of glacial till along the higher ridges and hilltops. Unlimed it is strongly acid. Bedrock occurs at 20 to 40 inches below this soil. Permeability is moderate. The available water capacity is moderate. Natural fertility is low. This soil is suited for crops, hay, pasture or woodland. The main problems are depth due to bedrock, and erosion hazard if cultivated and a shorter growing season due to elevation.

LdD Lordstown channery silt loam (15-25% slopes). This is a moderately deep, well drained, medium soil. It occupies moderately steep areas of glacial till along the higher ridges and hilltops. Unlimed it is strongly acid. Bedrock is at 20 to 40 inches below this

soil. Permeability is moderate. The available water capacity is moderate. Natural fertility is low. This soil is suited for limited cultivation, hay, pasture, or woodland. The Main problems are steepness of slope, an erosion hazard of cultivated and shallowness to bedrock.

LoE Lordstown and Oquaga channery silt loams (25-35% slopes). These are well drained, loamy soils formed in thin acid glacial till. The depth to hard sandstone bedrock is less than 4 feet with occasional rock outcrops. Slope gradients are steep. The soil material above the rock is moderately permeable. The steep slope coupled with the close proximity of hard bedrock layers imposes serious restrictions for most uses, with maintenance of material cover being desirable.

LrF Lordstown and Oquaga extremely stony and rocky soils. These are well drained, loamy soils formed in acid glacial till. The depth to hard sandstone bedrock is less than 4 feet with numerous rock outcrops. Slope gradients are very steep slopes and in many instances approach the vertical or are clifflike. The very steep slopes coupled with the close proximity of hard bedrock layers impose very serious restrictions for most uses, with maintenance of natural cover being most desirable.

LsE Lordstown and Oquaga extremely stony and rocky soils. These are well drained, loamy soils formed in thin acid glacial till. The depth to bedrock is less than 4 feet with numerous rock outcrops. Many large stones are on the surface. Slopes range from gentle to steep. Most of this soil is in forest cover.

Mf Made Land, Sanitary Landfill (Variable slopes). This is a miscellaneous land type used for the disposal of garbage and solid waste from urban and rural areas. The compacted refuse is buried with glacial till and the till is compacted. The resulting landform is generally flat on top with moderately steep side slopes. Seepage from the fill, stability of the landfill, and moderately steep slopes are the major considerations when reclaiming the landfill for urban, agricultural or forestry uses.

MhB Mardin channery silt loam (2-8% slopes). This is a deep, moderately well drained, medium textured soil which has a fragipan at 14 to 26 inches. It occupies gently sloping areas of glacial till in the uplands. Unlimed this soil is strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. The available water capacity is moderate. Natural fertility is low. It is adapted to row crops, hay, or pasture. The main problems are a seasonal high water table, low fertility, high acidity, and restricted rooting depth due to the fragipan. This soil is used mostly for crops grown in support of dairying.

MhC Mardin channery silt loam (8-15% slopes). This is a deep, moderately well drained, medium textured soil which has a fragipan at 14 to 26 inches. It occupies sloping areas of glacial till in the uplands. Unlimed, this soil is strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. The available water capacity is moderate. Natural fertility is low. It is adapted to row crops, hay or pasture. The main problems are and erosion hazard, a seasonal high water table,

restricted rooting depth due to the fragipan, low fertility and high acidity. This soil is used mainly for crops grown in support of dairying.

MhD Mardin channery silt loams (15-25%). This is a deep, moderately well drained, medium textured soil which has fragipan at 14 to 26 inches. It occupies moderately steep areas of glacial till in the uplands. Unlimed the soil is strongly or medium acid.

Permeability is moderate above the fragipan and slow in the fragipan. The available water capacity is moderate. The main problems are the steep slopes that make erosion a severe hazard if cultivated and the use machinery dangerous. Most of this soil is idle or in woodland.

MhE Mardin Channery silt loam (25-35% slopes). This is a deep, moderately well drained, medium textured soil. It is on the steep areas of glacial till material. A dense fragipan is in the lower subsoil. These slopes limit this soil to mainly woodland and wildlife uses. Some pasture can be grown but erosion is a serious hazard.

MmB Mardin channery silt loam, moderately shallow variant (2-8% slopes). This is a moderately well drained, loamy soil formed in thin, acid glacial till. The depth to bedrock is 2 to 4 feet. Slopes are nearly level or gentle. Permeability above the rock is moderate to slow. This soil contains a moderate amount of flat stone fragments. These stones, low natural fertility and presence of rock in the subsoil are the important features of this soil.

MnC Mardin-Chenango channery silt loams (5 to 15% slopes). These soils are in areas where outwash material has become mixed or interstratified with glacial till. They vary from moderately well to excessive in drainage class. The landscape is rolling and usually near a lower valley side slope. Some included dips or troughs and have wet spots. Normally this soil is acid.

MnD Mardin-Chenango channery silt loams (15-25% slopes). These soils are in areas where outwash material has become mixed or interstratified with glacial till. They are excessively drained and vary from rapid to moderate in permeability. These soils are on the moderately steep valley side often with irregular topography. Toe slope areas may have some seep spots.

MrF Mardin and Cattaraugus soils (35-60% slopes). This is a deep, acid medium textured glacial till soil area. Drainage is well or moderately well with some lower slopes accumulating surface water and seep. The slopes are very steep. These areas should be left in natural cover.

Ms Middlebury silt loam. This is a moderately well drained soil on Alluvial or bottom lands. It is nearly level and relatively free of stone fragments, at least to depths of 3 feet. This soil may flood annually. The water table is controlled by and corresponds closely to that of the nearby stream.

MtB Morris channery silt loam (2-8% slopes). This is a somewhat poorly drained, loamy soil formed in reddish colored, dense glacial till. This nearly level or gently sloping soil is on smooth upland slopes that accumulate some surface water. Seepy or wet conditions persist during the wetter portion of the year. It is moderately permeable in the upper 1.5 feet, below that it is slowly or very slowly permeable. Bedrock is at a depth of 4 to 15 feet in most instances.

MtC Morris channery silt loam (8-15% slopes). This is a somewhat poorly drained, loamy soil formed in reddish colored, dense glacial till. This sloping soil usually accumulates surface runoff from adjacent higher areas. This causes it to be seepy, especially during the wetter portions of the year. It is moderately permeable in the upper foot or so, but is very slowly permeable below this depth. Bedrock is at depths of 4 to 12 feet in most instances.

MuD Morris and Tuller very stony soils (3-25% slopes). These are somewhat poorly drained soils formed in compact glacial till. In places, bedrock may be within 2 feet of the surface. Slopes vary from gentle to moderately steep. Usually numerous seep spots are present. Numerous stones limit the soil to pasture type uses.

OuC Oquaga channery silt loam (5-15% slopes). This is a well drained, moderately deep (20" to 40") strongly acid, medium textured soil developed in thin till derived entirely from local rocks. It is found on high hill tops and moderate slopes just below the hill tops. This is the best Lordstown soil and it can be used for crops, pasture, and

forests. It is adapted to crops such as potatoes, alfalfa, and oats, the shorter growing season at the high elevations where it is found are not favorable for growing corn. It needs heavy liming and fertilization to maintain yields. Principal limitations for use are imposed by strong acidity, low fertility, high elevations, and moderate slopes.

OuD Oquaga channery silt loam (15-25% slopes). This is a well drained, strongly acid, moderately deep (20" to 40" to bedrock) soil developed in thin glacial till and fractured rock on moderately steep slopes. It can be used for crops, pasture, or forestry. When needed for cropland it is best suited to long-term hay meadows or grass-legumes mixtures. The erosion hazard is great when these slopes are planted to row crops. They should be plowed and reseeded only when the hay stands become thin and weedy. This soil has a strong to very strongly acid reaction and a low natural fertility level. It needs heavy liming and fertilization for even moderate yields.

Pm Peat and Muck. This soil is shallow (16" to 50" thick of undrained muck). It formed in deposits of grasses, sedges, cattails and other marsh type plants. The soil occupies old marsh and other depressional areas where organic matter has accumulated. It is strongly or very strongly acid. Permeability is rapid to moderate. This soil is not suitable for crops unless adequately drained. Most areas are not feasible to drain because of small size, lack of outlets, and shallowness. These areas are suitable for wildlife. Some areas may be good pond or marsh sites.

Sc Scio silt loam. This is a moderately well drained, silty soil formed in the stone free sediments. This nearly level soil is underlain by sand and gravel at about 4-foot depths. Surface water is readily removed, although the soil is wet for short periods during seasonally wet times. The soil material in the upper 4 feet is moderately permeable. Below this depth in the gravels the permeability is rapid. This gravel layer may be waterlogged during the wetter portion of the year. This soil can be susceptible to entrenchment, cave-in, or stability problems, especially when wet. The silty material is very erodible. Where located in the main valleys this soil has a remote chance to flood.

Ta Tioga silt loam (0-5% slopes). This soil has the profile described as typical of the series. It is on flood plains of major streams. Included in mapping were gravel bars, sandbars, and small spots of wetter Middlebury and Wayland soils. This is one of the most productive soils in the county for cultivated crops. It is also well suited to hay, pasture, and forest. Although it is usually flooded early in the spring, floodwater recedes rapidly. Control of stream bank erosion and channel gouging is a problem along some streams. Flooding is the main limitation to many nonfarm uses. This soil is one of the best sources of topsoil in the county/ (Capability unit I-2; woodland group 1)

Tg Tioga gravelly silt loam, fan. This deep, well-drained soil is gently sloping. It is formed in gravelly material deposited by tributary streams as they enter the larger valleys. The soil is quite permeable and contains a large amount of flat stone fragments. A persistent water table may be as close as 5 or 6 feet from the surface. This soil has a

gentle tilt toward the main valley. Portions of this unit may have a low frequency flood threat from the tributary stream.

TuD Tuller channery silt loam (0-25% slopes). This nearly level to sloping soil is 10 to 20 inches thick over sandstone bedrock. It is somewhat poorly to poorly drained. Surface water accumulates from nearly plateau landscapes. The bedrock is usually not fractured thus preventing this water from moving down through the soil. In most instances, the rock needs to be blasted for removal. This bedrock strata and the seepy, wet condition during much of the year are the prime factors to consider in any use of this soil.

UnB Unadilla silt loam (0-5% slopes). This soil is deep, well to somewhat excessively drained and medium textured. It occupies nearly level areas on glacial outwash plains and stream terraces. The unlimed soil is medium to strongly acid. Permeability is moderate to rapid in the solum and very rapid in the substratum. Available water capacity is moderate to low. Natural fertility is low. Natural fertility is low. This soil is suitable for a wide range of crops, hay and pasture. The main problems are fertility and pH. Vegetable crops may need irrigation.

UnC Unadilla silt loam (5-15% slopes). This is well-drained stone free soil that is sloping. Usually the topography is rolling with short slopes. Permeability is moderate. The soil material is very erodible. Substrata lenses that are wet may be unstable or provide poor foundation support.

VoA Volusia channery silt loam (0-3% slopes). This is a deep, somewhat poorly drained, medium textured soil which has a fragipan at 10 to 16 inches. It occupies level and nearly level areas of glacial till in the uplands. Unlimed, it is strongly to medium acid. Permeability is moderate in the upper part and slow in the fragipan. The available water capacity is moderate. Natural fertility is low. This soil is suited to crops, hay, pasture, or woodland. The main problems are prolonged wetness, low fertility, and low pH. The higher elevation and prolonged wetness make the growing season somewhat shorter. Where cultivated this soil is used for crops in support of dairying. The rest is idle or in woodland.

VoB Volusia channery silt loam (3-8% slopes). This is a deep, somewhat poorly drained, medium textured soil which has a fragipan at 10 to 16 inches. It occupies gently sloping areas of glacial till in the uplands. This soil is strongly to medium acid. Permeability is moderate in the upper part of and slow in the fragipan. The available water capacity is moderate. Natural fertility is low. This soil is suited to crops, hay, pasture, or woodland. The main problems are prolonged wetness, low fertility, and low pH. Erosion may be a problem on long slopes when cultivated. The higher elevation and prolonged wetness make the growing season somewhat shorter.

VoC Volusia channery silt loam (8-15% slopes). This is a deep, somewhat poorly drained, medium textured soil which has a fragipan at 10 to 16 inches. It occupies sloping areas of glacial till in the uplands. This soil is strongly to medium acid. Permeability is moderate in the part above the fragipan and slow in the fragipan. The

available water capacity is moderate. Natural fertility is low. This soil is suited to crops, hay, pasture, or woodland. The main problems are an erosion hazard due to steepness of slope and prolonged wetness makes the growing season somewhat shorter. Where cultivated this soil is used for crops in support of dairying.

VoC3 Volusia cannery silt loam (8-15% slopes, eroded). This is a deep, sloping medium textured, somewhat poorly drained soil, formed in very low lime glacial till, it occurs on smooth moderate slopes that have been seriously eroded. The loss of most of the original topsoil has further reduced the amount of soil material above the strong fragipan layer that can be exploited by roots. This soil can be used for crops, but it needs heavy liming and fertilization and should be kept in sod farming, crops most of the time. Use is very severely restricted by past erosion, seasonal wetness, low fertility, strong acidity, and the presence of the impervious layer just below the surface.

VoD Volusia channery silt loam (15-25% slopes). This is a deep, somewhat poorly drained, medium textured soil which has fragipan at 10 to 16 inches. It occupies moderately steep areas of glacial till in the uplands. This soil is strongly to medium acid. Permeability is moderate in the upper part and slow in the fragipan. The available water capacity is moderate. Natural fertility is low. This soil is suited to hay, pasture or woodland. The main problems are steepness of slope, a severe erosion hazard if cultivated, prolonged wetness, low fertility and low pH. The higher elevation and prolonged wetness make the growing season somewhat shorter.

Wa Wallington silt loam. This is a somewhat poorly drained, silty soil formed in compact stone free sediments. This nearly level soil is underlain by sand at about 4-foot depths. Surface water is removed rather slowly and downward movement is impeded by a slowly permeable subsoil. Permeability is rapid in the sandy substratum. However, this layer is waterlogged during the wetter portions of the year. This soil is susceptible to cave in, or stability problems especially when wet. The silty material is also very erodible. Where located in the main valleys this soil can be susceptible to flooding.

Wd Wayland silt loam. This is a poorly drained soil on flood plains. It is in nearly level on depressional landscapes. It floods annually and remains wet for long periods even after the floodwaters recede. The material is high in silt content and relatively stone free to depths of 4 to 6 feet. Below this level, some gravel strata can occur. The threat of flooding from the nearby stream and normally wet conditions even during dry times are the main features to consider in any use of this soil.