

NONTECHNICAL SOIL DESCRIPTIONS
LEWIS COUNTY, WEST VIRGINIA
AGRONOMIC (AGR)
Basic Soils (SOI)
GRASSLAND SUITABILITY GROUPS (GSG)

Bethesda-Rock outcrop complex, steep, very stony - BrE

AGR - These soils are not suited to cultivated crops or hay and are difficult to manage for pasture. They are better suited to woodland or wildlife uses.

SOI - This Bethesda-Rock outcrop, very stony complex consists of Bethesda soils intermixed with rock outcrops which are in such an intricate pattern that they cannot be separated in mapping at this scale. The very stony surface stones cover from 1 to 3 percent of the surface and ranging in diameter from 10 to 25 inches. These Bethesda soils are well drained and very deep soils that have formed in disturbed acid rock and soil material resulting from the surface mining of coal. They have a medium textured channery surface and medium to moderately fine textured extremely channery or shaley substrata. The estimated soil permeability ranges from moderate to moderately slow (.2 to 2.0 inches per hour). The Bethesda soil is uncompacted and rock fragments range from 35 to 80 percent by volume in the substrata. Bedrock is generally at depths of greater than 60 inches. Natural fertility is low and available water capacity is low to moderate. The Rock outcrop areas consist of vertical escarpments of sandstone and shale that follow the contour of the land. Boulders are on some benches and at the base of some slopes. The boulders and rock outcrops may occupy 15 percent or more of the unit. This unit may include areas of natural soils between strip benches or around edge of unit.

GSG - Very Rocky Acid Soils - Moderately deep, deep, and very deep well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally below 5.3. Slope ranges from 0 to 25 percent. Soils in this group have a very cobbly, very stony, or very rocky surface. Annual precipitation is 41 to 50 inches.

Buchanan channery loam, 3 to 15 percent slopes, very stony - BuC

AGR - This extremely stony soil is not suited to cultivated crops or hay, but is somewhat suited to pasture. Stones restrict the use of farm machinery. The hazard of erosion, which is severe in unprotected areas, is a major management concern. If this soil is used for pasture, the major management needs include removal of surface stones, proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Buchanan very stony soils have surface stones covering from 1 to 3 percent of the surface and ranging in diameter from 10 to 25 inches. Buchanan soils are very deep, moderately well drained soils on colluvial footslope areas. They have medium textured channery surface layers and medium textured channery or very channery subsoil. Buchanan soils have a firm and brittle fragipan layer 20 to 36 inches below the

surface, which has slow to moderately slow (estimated 0.06 to 0.6 inches per hour) permeability. The fragipan has from 5 to 60 percent rock fragments. They generally have a seasonal high water table starting at 16 to 30 inches below the surface. Bedrock is generally at depths greater than 5 feet. Natural fertility is low to moderate and available water capacity is moderate. These soils can have a slip hazard on slopes exceeding 10 to 15 percent.

GSG - Very Rocky Acid Soils - Moderately deep, deep, and very deep well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally below 5.3. Slope ranges from 0 to 25 percent. Soils in this group have a very cobbly, very stony, or very rocky surface. Annual precipitation is 41 to 50 inches.

Buchanan channery loam, 15 to 25 percent slopes, very stony - BuD

AGR - This extremely stony soil is not suited to cultivated crops or hay, but is somewhat suited to pasture. Stones restrict the use of farm machinery. The hazard of erosion, which is severe in unprotected areas, is a major management concern. If this soil is used for pasture, the major management needs include removal of surface stones, proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Buchanan very stony soils have surface stones covering from 1 to 3 percent of the surface and ranging in diameter from 10 to 25 inches. Buchanan soils are very deep, moderately well drained soils on colluvial footslope areas. They have medium textured channery surface layers and medium textured channery or very channery subsoil. Buchanan soils have a firm and brittle fragipan layer 20 to 36 inches below the surface, which has slow to moderately slow (estimated 0.06 to 0.6 inches per hour) permeability. The fragipan has from 5 to 60 percent rock fragments. They generally have a seasonal high water table starting at 16 to 30 inches below the surface. Bedrock is generally at depths greater than 5 feet. Natural fertility is low to moderate and available water capacity is moderate. These soils can have a slip hazard on slopes exceeding 10 to 15 percent.

GSG - Very Rocky Acid Soils - Moderately deep, deep, and very deep well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally below 5.3. Slope ranges from 0 to 25 percent. Soils in this group have a very cobbly, very stony, or very rocky surface. Annual precipitation is 41 to 50 inches.

Chagrin silt loam - Cn

AGR - This soil is suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously, but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. In places, crops are subject to damage from flooding. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Chagrin soils are very deep, well drained, and have formed in recent alluvial sediments along major streams. The Chagrin soils have a moderate permeability (0.6 to 2.0 inches per hour). They generally have a medium soil texture in the surface and subsoil. Bedrock is generally at depths greater than 5 feet. These soils are generally subject to occasional flooding. Natural fertility is high and available water capacity is high.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Gilpin silt loam, 8 to 15 percent slopes - GaC

AGR - This soil is suited to cultivated crops and to hay and pasture. The hazard of erosion, which is severe in unprotected areas, is a management concern. Using a conservation tillage system, growing crops in contour strips, maintaining sod in shallow drainageways, using a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes.

SOI - Gilpin soils are moderately deep, well drained soils formed in residuum from acid shale, siltstone and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. These soils generally have 10 to 35 percent rock fragments in the subsoil. Estimate soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility is low or moderate and available water capacity is low or moderate.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Gilpin silt loam, 15 to 25 percent slopes - GaD

AGR - This soil has limited suitability for cultivated crops and is better suited to hay and pasture. The hazard of erosion is severe in unprotected areas, and is a major management concern. Using a conservation tillage system, growing crops in contour strips, maintaining sod in shallow drainageways, using a crop sequence that includes hay, and returning crop residue to the soil are practices that help to control erosion and to maintain fertility and tilth. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing until the soil is reasonably firm.

SOI - Gilpin soils are moderately deep, well drained soils formed in residuum from acid shale, siltstone and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. These soils generally have 10 to 35 percent rock fragments in the subsoil. Estimate soil permeability is moderate (0.6 to 2.0 inches per hour).

Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility is low or moderate and available water capacity is low or moderate.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Gilpin silt loam, 25 to 35 percent slopes - GaE

AGR - This soil is not suited to cultivated crops or hay but is suited for pasture. The hazard of erosion is very severe in unprotected areas. If this soil is used for pasture, overgrazing is a major management concern. Proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing until the soil is reasonably firm are major pasture management needs.

SOI - Gilpin soils are moderately deep, well drained soils formed in residuum from acid shale, siltstone and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. These soils generally have 10 to 35 percent rock fragments in the subsoil. Estimate soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility is low or moderate and available water capacity is low or moderate.

GSG - Acid Hills - Moderately deep, deep, very deep moderately well and well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges 25 to 60 percent or 25 to 45 percent if severely eroded. Annual precipitation is 41 to 50 inches.

Gilpin silt loam, 35 to 70 percent slopes - GaF

AGR - This soil is not suited to cultivated crops or hay and is difficult to manage for pasture. The hazard of erosion is very severe in unprotected areas.

SOI - Gilpin soils are moderately deep, well drained soils formed in residuum from acid shale, siltstone and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. These soils generally have 10 to 35 percent rock fragments in the subsoil. Estimate soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility is low or moderate and available water capacity is low or moderate.

GSG - Acid Hills - Moderately deep, deep, very deep moderately well and well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges 25 to 60 percent or 25 to 45 percent if severely eroded. Annual precipitation is 41 to 50 inches.

Gilpin-Dekalb association, very steep, very stony - GDF

AGR - These soils are not suited to cultivated crops, hay or pasture. The hazard of erosion is very severe in unprotected areas.

SOI - These Gilpin and Dekalb very stony soils are mapped in an association on the landscape. The Gilpin soils are typically on the ridgetops and middle slopes and the Dekalb soils are typically on the convex upper side slopes and lower side slopes of the map unit. Stones that are 12 to 24 inches in diameter cover 1 to 3 percent of the surface. Gilpin soils are moderately deep, well drained soils formed in residuum from acid shale, siltstone and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. These soils generally have 10 to 35 percent rock fragments in the subsoil. Estimate soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility is low or moderate and available water capacity is low or moderate. These Dekalb soils are moderately deep, well drained soils on uplands. They have a moderately coarse textured surface layer and moderately coarse to coarse textured subsoil. The subsoil has over 35% sandstone fragments. The subsoil has moderately rapid to rapid (estimated 2.0 to 20.0 inches per hour) permeability. They are underlain at 20 to 40 inches by sandstone, interbedded with some siltstone and shale. Natural fertility is low and available water capacity is very low to moderate.

GSG - Very Rocky Acid Soils - Moderately deep, deep, and very deep well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally below 5.3. Slope ranges from 0 to 25 percent. Soils in this group have a very cobbly, very stony, or very rocky surface. Annual precipitation is 41 to 50 inches.

Gilpin-Upshur silt loams, 8 to 15 percent slopes - GuC

AGR - These soils are suited to cultivated crops and to hay and pasture. The hazard of erosion, which is severe in unprotected areas, is a management concern. Using a conservation tillage system, growing crops in contour strips, using a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth. If these soils are used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing until the Upshur soil is reasonably firm.

SOI - This Gilpin-Upshur silt loams soils unit consists of Gilpin and Upshur soils which are intermixed in such an intricate pattern that they cannot be separated in mapping at this scale. Gilpin soils are moderately deep, well drained soils which formed from acid shale, siltstone, and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. Estimated soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility of the Gilpin soil is low or moderate and available water capacity is low or moderate. Upshur soils are deep well drained soils which formed in limy material weathered from red and olive shale. They have medium surface textures and fine textured subsoils which become sticky and plastic when wet. Estimated soil permeability is very slow (less than 0.2 inches per hour). The depth

to bedrock is generally at depths ranging from 40 to 60 inches and rippable with light power equipment. Natural fertility of the Upshur soil is moderately high and available water capacity is moderate to high. Upshur soils have a slip hazard, especially on slopes greater than 8 percent. The subsoil is highly susceptible to shrinking when dry and swelling when wet.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Gilpin-Upshur silt loams, 15 to 25 percent slopes - GuD

AGR - These soils have limited suitability for cultivated crops and are better suited to hay and pasture. The hazard of erosion, which is severe in unprotected areas, is a major management concern. Using a conservation tillage system, growing crops in contour strips, using a crop sequence that includes hay, and returning crop residue to the soil are practices that help to control erosion and to maintain fertility and tilth. If these soils are used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing until the Upshur soil is reasonably firm.

SOI - This Gilpin-Upshur silt loams soils unit consists of Gilpin and Upshur soils which are intermixed in such an intricate pattern that they cannot be separated in mapping at this scale. Gilpin soils are moderately deep, well drained soils which formed from acid shale, siltstone, and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. Estimated soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility of the Gilpin soil is low or moderate and available water capacity is low or moderate. Upshur soils are deep well drained soils which formed in limy material weathered from red and olive shale. They have medium surface textures and fine textured subsoils which become sticky and plastic when wet. Estimated soil permeability is very slow (less than 0.2 inches per hour). The depth to bedrock is generally at depths ranging from 40 to 60 inches and rippable with light power equipment. Natural fertility of the Upshur soil is moderately high and available water capacity is moderate to high. Upshur soils have a slip hazard, especially on slopes greater than 8 percent. The subsoil is highly susceptible to shrinking when dry and swelling when wet.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Gilpin-Upshur silt loams, 25 to 35 percent slopes - GuE

AGR - These soils are not suited to cultivated crops or hay, but are suited to pasture. The hazard of erosion is very severe in unprotected areas and is a major management concern. If these soils are used for pasture, overgrazing is a major management concern. Proper stocking

rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing until the Upshur soil is reasonably firm are major pasture management needs.

SOI - This Gilpin-Upshur silt loams soils unit consists of Gilpin and Upshur soils which are intermixed in such an intricate pattern that they cannot be separated in mapping at this scale. Gilpin soils are moderately deep, well drained soils which formed from acid shale, siltstone, and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. Estimated soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility of the Gilpin soil is low or moderate and available water capacity is low or moderate. Upshur soils are deep well drained soils which formed in limy material weathered from red and olive shale. They have medium surface textures and fine textured subsoils which become sticky and plastic when wet. Estimated soil permeability is very slow (less than 0.2 inches per hour). The depth to bedrock is generally at depths ranging from 40 to 60 inches and rippable with light power equipment. Natural fertility of the Upshur soil is moderately high and available water capacity is moderate to high. Upshur soils have a slip hazard, especially on slopes greater than 8 percent. The subsoil is highly susceptible to shrinking when dry and swelling when wet.

GSG - Acid Hills - Moderately deep, deep, very deep moderately well and well drained soils with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges 25 to 60 percent or 25 to 45 percent if severely eroded. Annual precipitation is 41 to 50 inches.

Gilpin-Upshur silt loams, 35 to 70 percent slopes, severely eroded - GwF3

AGR - These soils are not suited to cultivated crops or hay and are difficult to manage for pasture. Livestock should be excluded from this soil. The hazard of erosion is very severe in unprotected areas. Bare areas are difficult to revegetate, but they should be seeded to a permanent cover. Mulching will help protect seeded areas until the plants become established.

SOI - This Gilpin-Upshur complex soil unit consists of Gilpin and Upshur soils which are intermixed in such an intricate pattern that they cannot be separated in mapping at this scale. Soil slips and shallow gullies are found in some areas of this severely eroded unit. Gilpin soils are moderately deep, well drained soils which formed from acid shale, siltstone, and sandstone. They have medium textured surface and medium to moderately fine textured subsoil. Estimated soil permeability is moderate (0.6 to 2.0 inches per hour). Bedrock is at depths of 20 to 40 inches. The bedrock is generally rippable with light power equipment. Natural fertility of the Gilpin soil is low or moderate and available water capacity is low or moderate. Upshur soils are deep well drained soils which formed in limy material weathered from red and olive shale. They have moderately fine textured surface and fine textured subsoils which become sticky and plastic when wet. Estimated soil permeability is very slow (less than 0.2 inches per hour). The depth to bedrock is generally at depths of 40 to 60 inches

and is rippable with light power equipment. Natural fertility of the Upshur soil is moderately high and available water capacity is moderate to high. Upshur soils have a slip hazard, especially on slopes greater than 8 percent. Their subsoils are highly susceptible to shrinking when dry and swelling when wet.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Hackers silt loam - Ha

AGR - This soil is well suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously, but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes.

SOI - These Hackers soils are deep (greater than 5 feet to bedrock), well drained soils that formed in alluvial high bottom sediments. They have medium textured surface layer and a medium to moderately fine textured subsoil. Estimated permeability is moderate (0.6 to 2.0 inches per hour). These soils have a rare flood hazard and they are flooded only when flood waters are at their highest. Natural fertility is high and available water capacity is high.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Janelew channery silt loam, steep - JaE

AGR - These soils are not suited to cultivated crops, generally not suited to hay and are difficult to manage for pasture. The hazard of erosion is severe in unreclaimed areas and soil slippage is very severe on slopes of 15 percent or greater. If these soils are used for pasture, a major management concern is overgrazing, which can result in severe erosion and loss of desirable grasses and legumes. The major pasture management needs are proper stocking rates, rotational grazing, application of fertilizer, and deferment of grazing in the spring until the soil is reasonably firm. These soils are better suited to woodland or wildlife uses.

SOI - These Janelew soils are well drained and very deep soils that have formed in disturbed calcareous rock and soil material resulting from the surface mining of coal. They have a medium textured channery surface and medium to moderately fine textured extremely channery substrata. The estimated soil permeability ranges from moderate to moderately slow (.2 to 2.0 inches per hour). The Janelew soil is subject to slippage on slopes of 15 percent or greater. Bedrock is generally at depths of greater than 65 inches except where bedrock escarpments are present along mining high wall. Natural fertility is moderate to high and available water capacity is moderate. This unit

may include areas of natural soils between strip benches or around edge of unit.

GSG - Limy Hills - Moderately deep, well drained soils with moderate to high natural fertility. Low moderate moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 25 to 45 percent or 15 to 35 percent if severely eroded. Annual precipitation is 41 to 50 inches.

Lobdell-Holly silt loams - Lh

AGR - These soils are suited to cultivated crops, but the Holly soils are better suited to water-tolerant hay or pasture plants. Using conservation tillage systems and a crop sequence that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to maintain fertility and tilth. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - This map unit consists of areas with mostly Lobdell soils, areas with mostly Holly soils and areas with both soils. These Lobdell soils are very deep (generally greater than 5 feet to bedrock), moderately well drained (seasonal high water table at a depth of 16 to 24 inches) soils that have formed in recent alluvial sediments. They have a medium textured surface layer and subsoil. The estimated soil permeability is moderate (0.6 to 2.0 inches per hour). Natural fertility is high and available water capacity is high. These soils have an occasional flood hazard. These Holly soils are very deep (greater than 6 feet to bedrock), poorly drained (seasonal high water table at or near the surface) soils that have formed in alluvial sediments along streams and drainageways. They have a silt loam surface layer and a medium textured subsoil. Estimated permeability is moderate (0.6 to 2.0 inches per hour). Natural fertility is high and available water capacity is high. These soils are usually located on the landscape in depression or low areas between better drained soils. These Holly soils are considered as hydric soils and usually found in wetlands in a natural undrained site. These Lobdell and Holly soils have an occasional flood hazard, but may have included areas of rare or no flooding.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Monongahela silt loam, 3 to 8 percent slopes - MoB

AGR - This soil is suited to cultivated crops and to hay and pasture. The hazard of erosion, which is moderate in unprotected areas, is a management concern. If this soil is cultivated, farming on the contour, using a crop sequence that included hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and

legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Monongahela soils are very deep, moderately well drained soils on high stream terraces. They have medium textured surface layers and medium to moderately fine textured subsoils. Monongahela soils have a firm and brittle fragipan layer 18 to 30 inches below the surface, which has slow (estimated 0.06 to 0.2 inches per hour) permeability. They have a seasonal high water table at 18 to 30 inches below the surface. Bedrock is generally at depths greater than 5 feet. Natural fertility is low and available water capacity is moderate.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Moshannon silt loam - Ms

AGR - This soil is suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously, but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. In places, crops are subject to damage from flooding. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Moshannon soils are deep, well drained, and have formed in recent alluvial sediments along major streams. The Moshannon soils have a moderate permeability (0.6 to 2.0 inches per hour). They generally have a medium soil texture in the surface and subsoil. Bedrock is generally at depths greater than 5 feet. These soils are generally subject to occasional flooding. Natural fertility is high and available water capacity is high.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Pope fine sandy loam - Po

AGR - This soil is suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously, but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. In places, crops are subject to damage from flooding. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Pope soils are very deep (generally greater than 5 feet to bedrock) and well drained soils. These soils have formed in acid alluvial floodplain sediments washed from soils underlain by sandstone, siltstone, and shale. They have a medium textured surface layer and moderately coarse to coarse textured subsoil. The estimated soil

permeability is moderate to moderately rapid (0.6 to 6.0 inches per hour) in the subsoil. Natural fertility is moderate and available water capacity is moderate to high. These soils generally have an occasional flood hazard.

GSG - Acid Loams - Moderately deep, deep, and very deep moderately well and well drained with low natural fertility. Moderate to high soil moisture holding capacity and pH is normally less than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Senecaville silt loam - Sn

AGR - This soil is suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously, but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. In places crops are subject to damage from flooding. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Senecaville soils are very deep (generally greater than 5 feet to bedrock), moderately well drained (seasonal high water table at a depth of 16 to 24 inches) soils that have formed in alluvial sediments along streams and drainageways. They generally have a silt loam surface layer and a silt loam subsoil. The estimated soil permeability is moderate (0.6 to 2.0 inches per hour). These soils have a flood hazard, but may have included areas of no flooding. Natural fertility is high and available water capacity is high.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Sensabaugh silt loam - Su

AGR - This soil is suited to cultivated crops and to hay and pasture. Cultivated crops can be grown continuously but the soil needs the protection of a cover crop. Working the residue from the cover crop into the soil helps to maintain fertility and tilth. In places, crops are subject to damage from flooding. If this soil is used for pasture, the major management needs include rotational grazing and proper stocking rates to maintain desirable grasses and legumes, and deferment of grazing until the soil is reasonably firm.

SOI - These Sensabaugh soils are generally very deep (greater than 5 feet to bedrock), well drained soils found mostly on bottomland floodplains along small stream. These soils have a medium textured surface and a medium textured gravelly subsoil. The estimated soil permeability is moderate to moderately rapid (0.6 to 6.0 inches per hour). Sensabaugh soils have a gravel layer (15 to 45 percent rock fragments) at depths ranging from 20 to 40 inches. They generally flood occasionally with an exception of high bottoms or alluvial fan areas having a rare flood hazard. Natural fertility is moderate or high and available water capacity is high.

GSG - Moist Loams - Deep and very deep, well drained soils with high natural fertility. High moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Udorthents, smoothed - Uf

AGR - These Udorthents are not suited to cultivated crops or hay, but have a limited suitability for pasture on some areas. They are better suited to woodland or wildlife.

SOI - This Udorthents, smoothed unit is a miscellaneous area of disturbed soil material that is too variable to assign any specific soil properties. The miscellaneous soil area ranges from dominantly clay to loam soil with or without rock material ranging from a few gravels to a massive bedrock escarpment.

GSG - Not Suited - All other soils that have a combination of soil properties and climate limitations that make them not suited for forage production because adequate growth for forage use plus soil stabilization is normally not possible.

Udorthents-Urban land complex - Ur

AGR - This Udorthents-Urban Land Complex map unit is a miscellaneous area of disturbed soil material, and impervious urban structures like roads, parking lots, and buildings of all kinds. This map unit is too variable to assign any specific soil properties. The miscellaneous soil area ranges from dominantly clay to loam soil with or without rock material ranging from a few gravels to a massive bedrock escarpment.

SOI - Udorthents, Smoothed-Urban land complex: This is a miscellaneous area of disturbed soil material, and impervious urban structures like roads, parking lots, and buildings of all kinds. This map unit is too variable to assign any specific soil properties. The miscellaneous soil area ranges from dominantly clay to loam soil with or without rock material ranging from a few gravels to a massive bedrock escarpment.

GSG - Not Suited - All other soils that have a combination of soil properties and climate limitations that make them not suited for forage production because adequate growth for forage use plus soil stabilization is normally not possible.

Vandalia silt loam, 8 to 15 percent slopes - VaC

AGR - This soil is suited to cultivated crops and to hay and pasture. The hazard of erosion, which is severe in unprotected areas, is a management concern. Using a conservation tillage system, growing crops in contour strips, maintaining sod in shallow drainageways, using a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Vandalia soils are well drained, red soils on colluvial footslopes. They have a moderately fine textured surface and a fine textured subsoil. Estimated permeability is moderately slow to slow (0.6 to 0.06 inches per hour). Vandalia soils have a slip hazard, especially when slopes are greater than 8%. Their subsoils are highly susceptible to shrinking when drying and swelling upon wetting. Bedrock is generally at depths greater than 5 feet. Natural fertility is moderate or high and available water capacity is moderate or high.

GSG - Fertile Loams - Moderately deep, deep, and very deep moderately well and well drained soils with moderate natural fertility. Moderate soil moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Vandalia silt loam, 15 to 25 percent slopes - VaD

AGR - This soil has limited suitability for cultivated crops. It is better suited to hay or pasture. The hazard of erosion, which is severe in unprotected areas, is a major management concern. Using a conservation tillage system, growing crops in contour strips, maintaining sod in shallow drainageways, using a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth. If this soil is used for pasture, the major management needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Vandalia soils are well drained, red soils on colluvial footslopes. They have a moderately fine textured surface and a fine textured subsoil. Estimated permeability is moderately slow to slow (0.6 to 0.06 inches per hour). Vandalia soils have a slip hazard, especially when slopes are greater than 8%. Their subsoils are highly susceptible to shrinking when drying and swelling upon wetting. Bedrock is generally at depths greater than 5 feet. Natural fertility is moderate or high and available water capacity is moderate or high.

GSG - Fertile Loams - Moderately deep, deep, and very deep moderately well and well drained soils with moderate natural fertility. Moderate soil moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 0 to 25 percent. Annual precipitation is 41 to 50 inches.

Vandalia silt loam, 25 to 35 percent slopes - VaE

AGR - This soil is not suited to cultivated crops or hay, but it is suited to pasture. The hazard of erosion, which is very severe in unprotected areas, is a major management concern. If this soil is used for pasture, overgrazing is a major management concern. Major pasture needs include proper stocking rates to maintain desirable grasses and legumes, rotational grazing, and deferment of grazing in the spring until the soil is reasonably firm.

SOI - These Vandalia soils are well drained, red soils on colluvial footslopes. They have a moderately fine textured surface and a fine textured subsoil. Estimated permeability is moderately slow to slow (0.6 to 0.06 inches per hour). Vandalia soils have a slip hazard,

especially when slopes are greater than 8%. Their subsoils are highly susceptible to shrinking when drying and swelling upon wetting. Bedrock is generally at depths greater than 5 feet. Natural fertility is moderate or high and available water capacity is moderate or high.

GSG - Fertile Hills - Moderately deep, deep, and very deep moderately well drained soils with moderate natural fertility. Moderate soil moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 25 to 60 percent or 25 to 45 percent if severely eroded. Annual precipitation is 41 to 50 inches.

Westmoreland-Upshur complex, 25 to 35 percent slopes, severely eroded - WuE3

AGR - These soils are not suited to cultivated crops or hay and are difficult to manage for pasture. The hazard of erosion is very severe in unprotected areas. Bare areas are difficult to revegetate, but they should be seeded to permanent cover. Mulching will help protect seeded areas until the plants become established.

SOI - This Westmoreland-Upshur soil complex consists of Westmoreland and Upshur soils which are intermixed in such an intricate pattern that they cannot be separated in mapping at this scale. Soil slips and shallow gullies are found in some areas of this severely eroded unit. These Westmoreland soils are deep well drained soil found on uplands. Estimated permeability is moderate (0.6 to 2.0 inches per hour). These soils have a medium textured surface and subsurface with rock fragments increasing with depth. This soil is underlain by bedrock of shale, siltstone, sandstone or limestone at depths greater than 40 inches. Natural fertility is high and available water capacity is moderate to high. The Westmoreland soil have closely associated included soils on the same landscape and map unit that have a slip hazard on slope greater than 15 percent. Upshur soils are deep well drained soils which formed in limy material weathered from red and olive shale. They have medium textured surface and fine textured subsoils which become sticky and plastic when wet. Estimated soil permeability is very slow (less than 0.2 inches per hour). The depth to bedrock is generally at depths of 40 to 60 inches and is rippable with light power equipment. Natural fertility of the Upshur soil is moderately high and available water capacity is moderate to high. Upshur soils have a slip hazard, especially on slopes greater than 8 percent. Their subsoils are highly susceptible to shrinking when dry and swelling when wet.

GSG - Fertile Hills - Moderately deep, deep, and very deep moderately well drained soils with moderate natural fertility. Moderate soil moisture holding capacity and pH is normally greater than 5.3. Slope ranges from 25 to 60 percent or 25 to 45 percent if severely eroded. Annual precipitation is 41 to 50 inches.