

SYSTEM	SERIES	GROUP	FORMATION	THICKNESS, IN FEET	SECTION	LITHOLOGY	TOPOGRAPHY	HYDROLOGY			
QUATERNARY	PLEISTOCENE AND RECENT		ALLUVIUM	0-140±		Silt and fine grained sand in upper part, and medium- coarse to grained sand with lenses of gravel in lower part in the Ohio River valley. Mostly silt, but some sand in the Kentucky River valley. Thin and fine grained in tributary-stream valleys.	Flood plains and terraces of the Ohio and Kentucky Rivers and tributaries. Some Ohio River terraces are as much as 80 feet above normal pool stage.	Yields as much as 500 gpm (gallons per minute) to drilled wells in the Ohio River valley; yields more than 500 gpd to wells in the Kentucky River valley. Water is hard, and the iron content may be high near the Ohio River valley walls and along the Kentucky River. Too thin and fine grained in tributary valleys to yield usable amounts of water.			
			LOUISVILLE LIMESTONE	10±		Massive fine-grained limestone.	Tops of ridges in western part of area.	Yields water to seeps.			
SILURIAN			WALDRON SHALE	10±		Greenish-gray coarse nonfissile calcareous or magnesian shale.	Slopes between ledges above and below.	May hold up some water in overlying Louisville limestone; otherwise too limited in outcrop area to prevent recharge to underlying Laurel dolomite.			
			LAUREL DOLOMITE	35-40		Bluish-gray fine-grained massive dolomitic limestone.	Tops of ridges in western part of area.	Yields 100 to 500 gpd to wells on broad ridges; yields water to small springs at contact with underlying Osgood formation.			
			OSGOOD FORMATION	15-20		Fissile to lumpy calcareous and magnesian shale with a few thin beds of fine-grained limestone.	Slopes between ledges above and below.	Yields almost no water from shale; yields water to seeps from limestone; impedes recharge to underlying rocks. Water is hard.			
			BRASSFIELD LIMESTONE	1-4		Pink to yellow medium-crystalline to coarsely crystalline dolomitic limestone.	Ledges on hillsides and in ravines.	Yields water to seeps.			
			SALUDA LIMESTONE	30-40		Thick-bedded fine-grained magnesian limestone having a sandy appearance.	Tops of ridges and ledges on hillsides and along streams.	Yields 100 to 500 gpd to drilled wells in valley bottoms, but almost no water to wells on hills; may yield a little water to dug wells on ridgetops; yields water to small springs and seeps. Water is hard and may contain salt or hydrogen sulfide below stream level.			
ORDOVICIAN	UPPER	MAYSVILLE	LIBERTY FORMATION	40		Bluish-gray coarse shale with thin interbedded layers of crystalline limestone.					
			WAYNESVILLE LIMESTONE	40-90		Green to gray massive fine-grained argillaceous limestone with thin beds of green shale.	Moderately rolling upland where limestone predominates; more dissected where shale predominates.	Yields 100 to 500 gpd to wells in valleys or on broad ridges, but almost no water to drilled wells on narrow ridges or hilltops; yield water to dug wells and to small springs. Water is hard and of good quality.			
			ARNHEIM FORMATION	60-100		Bluish-gray lumpy claystone and thin-bedded shale with much interbedded knotty and rubby limestone.					
			MC MILLAN FORMATION	75-125		Thin- to medium-bedded argillaceous, locally rubby, limestone with much interbedded, lumpy, and unevenly bedded bluish-gray calcareous shale. The Bellevue limestone member in the lower part is composed of thin, locally crossbedded or rubby crystalline limestone with shale partings.	Gently to moderately rolling upland away from major streams; more highly dissected where shale predominates; broad, flat valleys, small sinkholes, and some underground drainage where limestone predominates. Lower part forms broad, flat ridges between steep-sided valleys cut into the underlying Eden shale.	Yields 100 to 500 gpd to wells in valley bottoms; yield more than 500 gpd from thick limestone beds in broad valley bottoms; yield almost no water to wells on hillsides or hilltops; may yield some water to dug wells on ridgetops; yield water to small springs. Small perennial springs in limestone in lower part of McMillan formation, especially in Henry County. Water is hard and may contain salt or hydrogen sulfide in valley bottoms.			
			FAIRVIEW FORMATION	77-100		Alternating gray rubby limestone and bluish-gray lumpy calcareous shale.					
			EDEN	180		Lumpy bluish-gray calcareous shale with thin evenly bedded argillaceous limestone. Little limestone in some places; may constitute half the section in other places. Rocks may be silty near the top.	Rugged topography of narrow, steep-sided ridges and narrow, V-shaped valleys of dendritic drainage. Steep slopes erode easily and are covered with thin limestone slabs. The contrast with the uplands of the outcrop areas of the Maysville and Richmond groups is marked except near major streams.	Yields 100 to 500 gpd in broad valley bottoms; yields almost no water to wells on hillsides or hilltops, although dug wells may obtain some water in ridgetops; yields water to small springs and seeps. Water is hard and may contain salt or hydrogen sulfide in valley bottoms.			
			ORDOVICIAN	LOWER	LEXINGTON	CYNTHIANA FORMATION	40-108		Thin- to thick-bedded fine- to coarse-grained siliceous and argillaceous limestone, crossbedded, rubby, or bouldery; various amounts of drab or bluish-gray shale.	Broad valley bottoms along the Kentucky River and large tributaries; lower walls of the Kentucky River valley in the southern part of the area.	
						DEVILS HOLLOW FACIES	0-25		Fine- to coarse-grained argillaceous or siliceous limestone.		
						WOOD-BURN LIMESTONE MEMBER	40		Light-gray coarse-grained phosphatic limestone.		Yields more than 500 gpd to wells in broad valley bottoms; yields 100 to 500 gpd to wells in small valleys; yields water to springs. Water is hard and may contain salt or hydrogen sulfide below stream level.
						BENSON LIMESTONE	50-75		Thin to medium-thick beds of bluish-gray medium-crystalline to coarsely crystalline limestone and some shale.	Broad, flat valley of the Kentucky River and large tributaries in the southern part of the area.	
JESSAMINE LIMESTONE	75-80±					Irregularly bedded fine-grained limestone with much interbedded calcareous shale.					

¹ Of McFarlan and White, 1948.

GENERALIZED COLUMNAR SECTION AND WATER-BEARING CHARACTER OF THE ROCKS IN CARROLL, GALLATIN, HENRY, OWEN, AND TRIMBLE COUNTIES, KENTUCKY (COUNTY GROUP 23)

By
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