

MAPPED KARST GROUNDWATER BASINS IN THE LEXINGTON 30 x 60 MINUTE QUADRANGLE

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EXPLANATION
This map shows karst groundwater basins in the Lexington quadrangle, determined primarily by groundwater tracer studies. It can be used to quickly identify the groundwater basins and springs to which a site may drain. Major springs and the relative size of their catchment areas can be evaluated for potential as water supplies. The map also serves as a geographic index to literature on karst groundwater in the area.

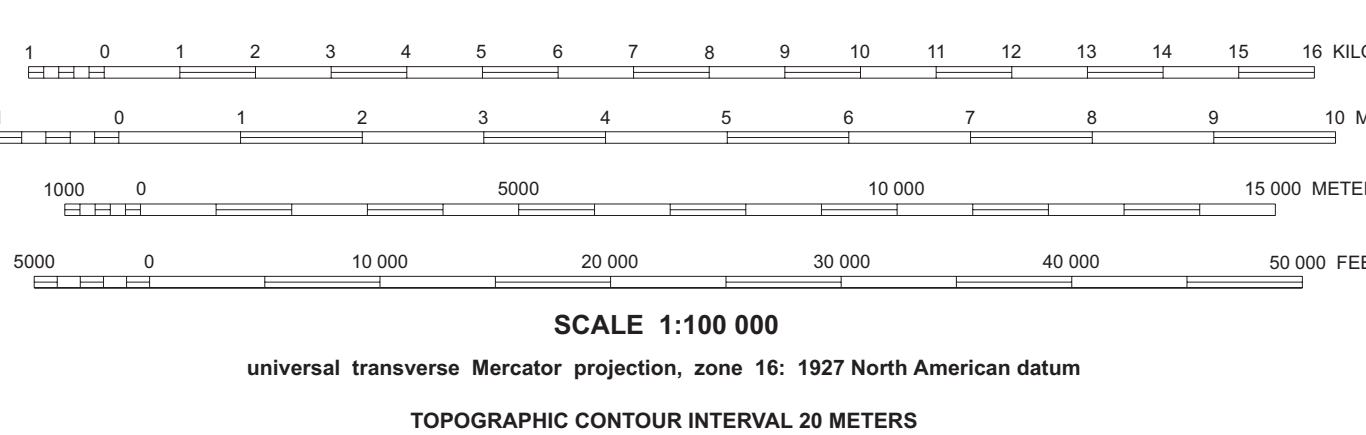
This map is designed for regional and preliminary hydrologic investigations. Features such as springs and swallets are much too small to precisely locate on this map with a scale small enough to show regional relationships. The user is referred to the literature for detailed site descriptions. The data used to compile this map were obtained by numerous investigators over the last 25 years. The underflow spring draining a groundwater basin is assigned a unique identification number, referred to as the AKGWA number (Assembled Kentucky Ground Water database). Individual basins are identified by the underflow spring name and AKGWA number. The authors of tracer data are identified by number in the "Data Source" column of the key, and are listed in "References Cited" in order of publication or research date.

Although groundwater flow routes shown here have been established by tracer studies, with the exception of mapped cave streams, the precise flow paths are unknown and are inferred or interpreted using water-level data, geologic structure, or surface features. Arrows show the direction of groundwater flow and tracer recovery locations. Conduit flow is illustrated as either thick trunk-flow lines or thin tributary-flow lines. The locations of some groundwater basins are inferred, based on the existence of a significant spring system and the delineation of adjacent basins. The position of groundwater basin boundaries should be considered approximate because of the map's scale and because boundaries can shift during high-water conditions. Also, excess flow may exit or enter a basin via surface or subsurface overflows. Additional overflow routes probably exist. Although most of the groundwater-tracing results shown on this map were obtained during moderate- or high-flow conditions, the groundwater basins are illustrated in base flow because base flow is the most common flow condition. The main spring draining the basin is assumed to be an underflow spring that preferentially drains base flow. Overflow springs discharge during high flow. Generally, names of groundwater basins are derived from these main springs. Not all additional springs are shown because of the small map scale.

DISCLAIMER: This map is subject to revision upon receipt of new hydrologic data. The unshaded area (shown in white on the map) is karst. The shaded area (shown in light brown) is largely underlain by noncarbonate rocks and has minimal development of karst. Karst features are only shown in those areas where tracer tests have been conducted. The user should consult the "References Cited" for additional information.

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- LEGEND**
- Area of potential karst groundwater basin development
 - Area of limited karst groundwater basin development
 - Inferred perennial groundwater flow route
 - Surface overflow (high-flow) route
 - Groundwater basin catchment boundary
 - Groundwater basin catchment sub-boundary
 - Stream sink or swallet
 - Underflow spring (perennial)
 - Overflow spring (high flow)
 - Karst window or sinking spring
 - Cave stream
 - Other tracer-injection point
 - Water well
 - Kentucky Division of Water AKGWA spring identification number
 - ROARING Spring name

KEY

AKGWA No.	Spring Name	Data Source	AKGWA No.	Spring Name	Data Source
0000	Taylor	(5, 16, 18)	2964	WSP 7 (Pine Oak Cave)	(14)
0001	Holt Lane	(6)	2965	Shedias	(14, 8)
0002	Blue Hole	(20)	2966	Holland	(4)
0041	Royal	(2, 21, 22, 27)	2967	Comett	(4)
0055	Royal	(3, 4)	2968	Nance	(4)
0077	Silver	(2)	2969	Teva	(4)
0081	Fawn Leap	(7)	2970	Elk Horn	(4)
0088	Mystery	(4)	2971	Manley	(10)
0091	Premons (McCormell)	(9, 10)	2972	Spring 10	(12)
0111	Landay	(16)	2973	WSP 5 (Sumner)	(12)
0124	Keentons	(1)	2974	WSP (Blue Hole)	(14)
0221	Cheault (Garrets Basin 0217)	(10, 11)	2975	WSP	(14)
0222	Webber	(7, 28)	2976	Northeast Main (B5)	(13)
0598	Soberland	(16)	2979	Vaughans	(4)
0598	Soberland	(16)	2980		
0815	Whitlege Station	(28)			
0958	Whitlege Station	(14)			
1143	Cedar Cove	(17)			
1154	Shack	(3)			
1230	Jennings	(3)			
1231	Thorn Hill Cave (Pipelines)	(1, 2, 28)			
1233	Myrtle Avenue	(18)			
1234	Double	(18, 22)			
1236	Double	(16, 22)			
1237	Acrystone	(7)			
1265	Briarwood	(7)			
1382	Gains	(16, 21)			
1382	Gains	(16, 21)			
1445	Gains	(4)			
1442	Gains	(4)			
1512	Santon	(2)			
1513	Santon	(2)			
1574	Marshall	(13)			
1574	Hall	(28)			
1574	Hall	(28)			
1574	Lymanke	(10)			
1620	Shropshire	(16)			
1678	Silver Spring Farm	(28)			
1680	Pepper	(28)			
1796	Keene	(28)			
1897	Pepper	(22)			
2395	Patterson	(10)			
2416	Patterson	(10)			
2417	Hall	(10, 19)			
2419	Bowman Mill	(10)			
2420	Hall	(10)			
2421	Manley	(10)			
2532	Teiler Branch	(21)			
2534	Rincy	(21)			
2538	Railroad Culvert	(24)			
2540	Panther Rock	(24)			
2544	Keentons	(24)			
2591	Airy Mount	(28)			
2597	Pigeon	(28)			
2598	Road 1685 (Fishing Shack)	(28)			
2600	Carl	(28)			
2605	Huston	(28)			
2621	Boyd Run	(28)			
2629	Boyd Run	(28)			
2638	Boyd Run	(28)			
2669	Buffalo	(28)			
2672	Hawkins Elmore	(28)			
2676	Shoelick	(26)			

KEY (continued)

AKGWA No.	Spring Name	Data Source
2976	WSP 7 (Pine Oak Cave)	(14)
2977	Shedias	(14, 8)
2978	Holland	(4)
2979	Comett	(4)
2980	Nance	(4)
2981	Teva	(4)
2982	Elk Horn	(4)
2983	Manley	(10)
2984	Spring 10	(12)
2985	WSP 5 (Sumner)	(12)
2986	WSP (Blue Hole)	(14)
2987	WSP	(14)
2988	Northeast Main (B5)	(13)
2989	Vaughans	(4)

ACKNOWLEDGMENTS:
We thank the many karst investigators who have contributed data for this map. Without their cooperation this map would not have been possible.

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CAUTION: Prolonged exposure to sunlight or contact with water will damage this map.

Locations of the 30 x 60 minute quadrangles covering Kentucky. The location of the Lexington quadrangle is highlighted in green.

Cartography by Terry Housh