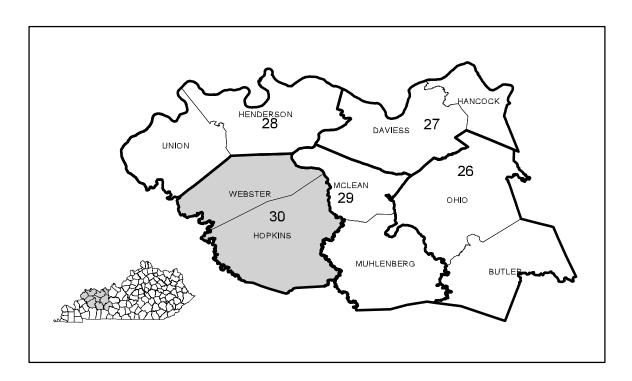
### DEPARTMENT OF THE INTERIOR UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE COMMONWEALTH OF KENTUCKY AND THE KENTUCKY GEOLOGICAL SURVEY UNIVERSITY OF KENTUCKY

# AVAILABILITY OF GROUND WATER IN HOPKINS AND WEBSTER COUNTIES, KENTUCKY

By B.W. Maxwell and R.W. Duvaul

#### HYDROLOGIC INVESTIGATIONS ATLAS HA-30



## INDEX MAP OF THE WESTERN COAL FIELD REGION, KENTUCKY, SHOWING COUNTY GROUPS AND AREA OF THIS ATLAS

This is 1 of 5 atlases (HA-26 to HA-30) showing geology and availability of ground water in the Western Coal Field region, Kentucky U.S. Geological Survey Water-Supply Paper 1599 contains a text description and illustrations providing further information on the occurrence and quality of ground water in the Western Coal Field region.

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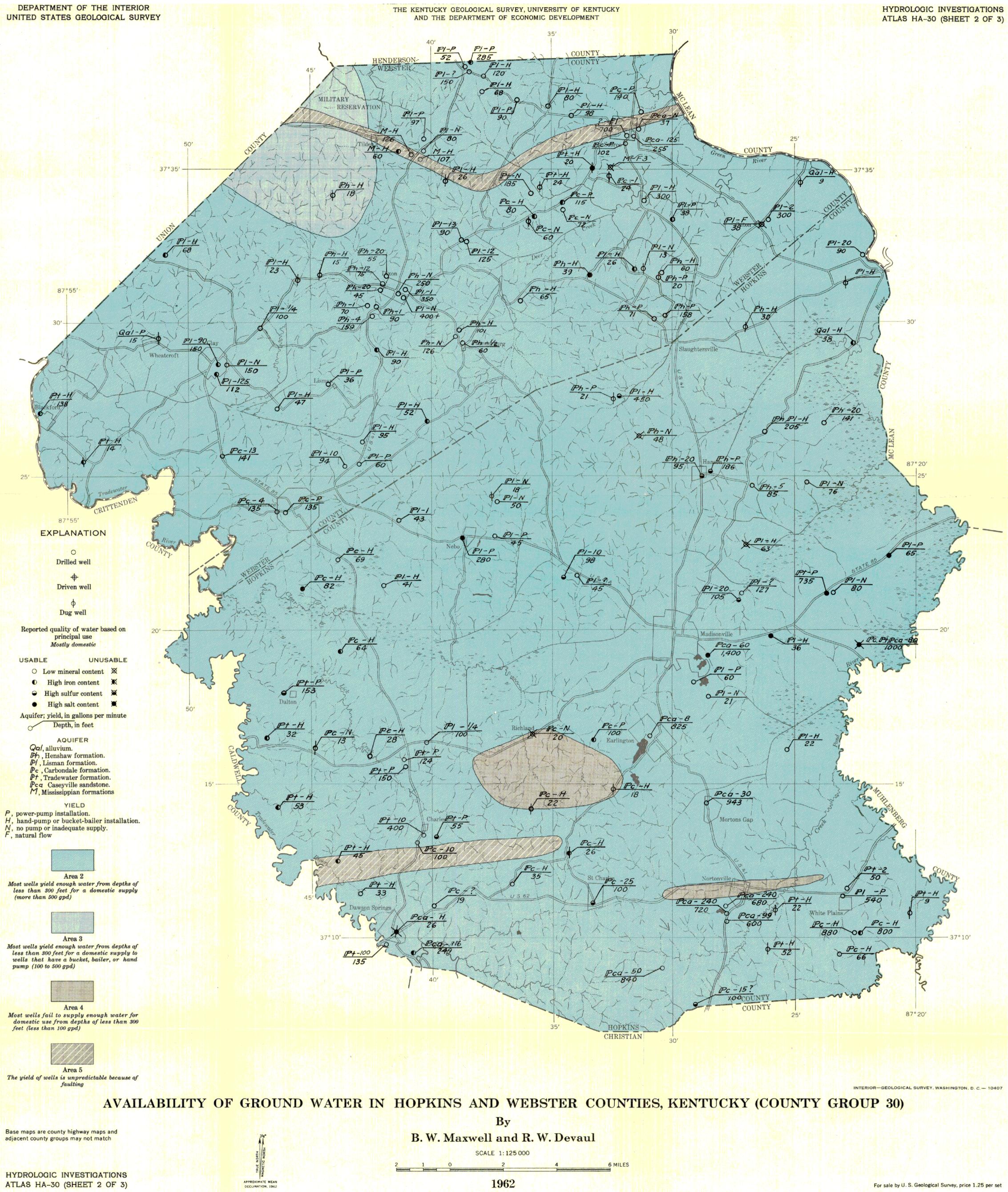
WASHINGTON, D.C.

1962

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HYDROLOGIC INVESTIGATIONS

ATLAS HA-30 (SHEET 1 OF 3)



Yields practically no water to most wells. However, near Hanson and Manitou, some wells intersecting Underlies the Moorman syncline. Crops out along flanks of joints produce enough water for a modern domestic supply. Water ranges from very soft to hard and 1000= the syncline in both counties and in the fault blocks north Shale, sandy shale, limestone, thin coal beds, and sandstone lenses. of Nortonville and St. Charles in Hopkins County. may contain hydrogen sulfide Madisonville limestone member Anvil Rock Yields enough water for a modern domestic supply to most wells. Many wells produce more than 10 Crops out between Wheatcroft, Webster County, and Earlgpm, and some wells produce more than 100 gpm. Water from shallow wells near the outcrop area is sandstone ington, Hopkins County, and between Tilden and Onton, member Crossbedded fine- to coarse-grained friable to well cemented quartz hard, and water from deep wells further from the outcrop area is soft and contains sodium bicarbonate both in Webster County. From these two outcrop areas 150 sandstone containing quartz pebbles; grades laterally into shale. (in some places in objectionable amounts). the unit dips inward to a depth of about 1,100 feet south-Providence east of Vanderburg. limestone member Yields practically no water to wells. No. 11 coal TEM Upper Z Crops out around Sebree and in an irregular band extending sandstone Y from Wheatcroft, through Providence (both in Webster member Yields enough water for a modern domestic supply to most wells. Wells are known to produce as much County) and Richland to Mortons Gap, and thence north-S as 30 gpm. Water is hard but otherwise of good quality. Yields either no water or water containing Fine-grained quartz sandstone, locally shaly. Z eastward to Pond River in Hopkins County. Underlies the SY iron sulfate in areas where the Kentucky No. 9 coal has been mined. V Moorman syncline between these exposures. Crops out No. 9 coal > also in fault blocks west of Mortons Gap. S 230± NIFEROU S Crops out southwest of Sebree and in an irregular band ex-Z tending from the Webster County boundary west of Wheat-Z Shale, sandy shale, and thin coal beds. Locally the Pleasantview Yields practically no water to wells. Pleasantview(?) croft southeastward to Charleston, thence eastward through ш sandstone4 is present above the Sebree sandstone.1 St. Charles and White Plains to the Pond River. Underlies sandstone4 the Moorman syncline between these two outcrops areas. Schultztown coal 90 0 Sebree 8 sandstone 1 No. 7 coal R Yields enough water for a modern domestic supply to most wells. Yields as much as 20 gpm to some Crops out on hills east of Sebree and the line of hills 2 miles A Crossbedded coarse- to medium-grained friable to well-cemented wells. Water is of good quality except in the deepest part of the Moorman syncline and north of the south of Sebree; crops out on a line from the county 0 Shawneetown-Rough Creek fault zone where the water is brackish or salty. No. 6 coal locally shaly quartz sandstone. boundary west of Wheatcroft through Charleston. No. 5 coal Yields practically no water to wells. Shale, sandy shale, and thin coal and limestone beds. Curlew sandstone 3 Yields enough water for a modern domestic supply to most wells. Yields as much as 30 gpm to some Crossbedded coarse- to fine-grained friable to well-cemented wells. Water is of good quality except in the deeper part of the Moorman syncline and north of the Curlew locally shaly quartz sandstone. Shawneetown-Rough Creek fault zone where the water is brackish or salty. limestone<sup>5</sup> 350-500 Aberdeen Crops out along the southwestern edges of both counties and sandstone 6 south of Sebree. Underlies most of the area. Yields enough water for a modern domestic supply to most wells near the outcrop area. Water is of Shale, sandy shale, sandstone, and thin coal and limestone beds. good quality except north of the Shawneetown-Rough Creek fault zone and in the deeper part of the Sandstone present locally near the middle and at the base. Moorman syncline. Finnie sandstone 1 Coal Grindstaff sandstone 80 member No. 1a coal **Bee Springs** sandstone ? Yields enough water for a modern domestic supply to most wells near the outcrop area. Yields more Crossbedded conglomeratic medium- to coarse-grained sandstone Crops out south of Sebree, in fault blocks west of Sebree, at than 100 gpm to some wells. Water from wells in outcrop area is hard, and water from wells away intertonguing with shale. The middle part contains several thin 250from the outcrop area is soft and contains sodium bicarbonate. Water from wells north of the Dawson Springs, and along the southern edge of Hopkins coal and limestone beds and more shale than the upper and County. Underlies area between these exposures. Shawneetown-Rough Creek fault zone and in the deep part of the Moorman syncline contains salt in 500 lower parts. Uncomformity at the base. objectionable amounts. **Battery Rock** coal? Lower conglom-MISSISSIPPIAN erate member Crops out in fault blocks along the Shawneetown-Rough Yields enough water for a domestic supply (100 to 500 gpd) to wells in outcrop area in the Shawneetown-**Formations** Rough Creek fault zone. Water is hard but otherwise of good quality. Water from Mississippian Creek fault zone and underlies the subsurface of all of both Limestone, shale, sandy shale, and sandstone. of late rocks underlying younger rocks, contains salt in objectionable amounts. Chester INTERIOR-GEOLOGICAL SURVEY, WASHINGTON, D. C .- 10407 <sup>2</sup> of Glenn (1922) <sup>3</sup> of Owen (1856) <sup>4</sup> of Wanless (1929) <sup>5</sup> as used by Wanless (1939) <sup>6</sup> of Crider (1915) <sup>7</sup> of Norwood (1876) of Glenn (1912)

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