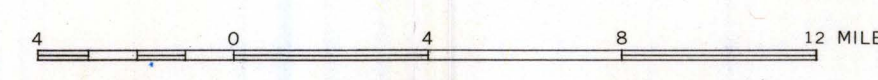


Base maps are county highway maps and adjacent county groups may not match

AVAILABILITY OF GROUND WATER IN BRECKINRIDGE, GRAYSON, HARDIN, LARUE, AND MEADE COUNTIES, KENTUCKY

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SCALE 1:250 000



1963

WATER-BEARING FORMATION

- Qal Quaternary alluvium
- P Pennsylvanian
- Mc Chester age
- Mm Meramec age
- Mo Osage age
- D Devonian

EXPLANATION

- Drilled well
- Dug well
- Depth to water below land surface, in feet
- Type of lift
- Yield of well
- Depth of well below land surface, in feet
- Water-bearing formation

TYPE OF LIFT

- B Baileer or bucket
- H Hand force pump
- P Power pump
- N No pump, bucket, or baileer

YIELD

- 185 Gallons per minute, where known
- S Satisfactory supply for domestic use
- I Inadequate supply for domestic use
- T Yield not determined
- SB Minimum yield of well reported 100 gallons per day
- SH Minimum yield of well reported 500 gallons per day
- IB Will not yield a minimum supply with type of lift installed
- IP

METHOD USED TO DETERMINE YIELD

- E Estimated on basis of one observation
- M Measured with pygmy meter or flume more than one time. Minimum measured flow shown
- O Measured with pygmy meter or flume one time. Observed measured flow shown

YIELD

- 300 Gallons of flow per minute

Water in Mississippian rocks of Chester age
About half the drilled wells are adequate for a domestic supply with bucket or baileer (more than 100 gpd). A few wells yield enough for a domestic supply with power pump (more than 500 gpd), but mostly from depths of about 150 feet or more. Shallow drilled wells (less than 100 feet deep) generally are inadequate for a domestic supply (less than 100 gpd). Most dug wells are inadequate for a domestic supply (less than 100 gpd). An adequate domestic supply with bucket or baileer (more than 100 gpd) may be obtained in some places close to streams if perched water bodies in sandstone formations are intercepted. Most wells in the Leitchfield and Buffalo Wallow formations are inadequate for domestic use. A minor spring horizon is present at the base of the Big Clifty sandstone. Flows range up to about 50 gpm. Seepage springs occur at other horizons, but most are seasonal. A few large springs occur near the Chester-Meramec contact. The lower Chester limestone is lithologically similar to the Meramec, and solution openings are well formed in places. Flows are as much as 1,000 gpm.

Water in Mississippian rocks of Meramec age
More than three-fourths of the drilled wells in this area yield enough water for a domestic supply with a power pump (more than 500 gpd). Very few wells are inadequate for domestic use with baileer or bucket (less than 100 gpd). Wells that penetrate large solution channels yield more than 5 gpm, and some yield more than 50 gpm. Dug wells are inadequate for a domestic supply with bucket or baileer (less than 100 gpd) except where water levels are close to perennial stream levels. Springs are present in a few areas where there are minor surface streams. Flows are as much as 500 gpm. Many of the springs are of the depression type and yield more than 100 gpm when pumped.

Water in Mississippian rocks of Meramec age
Springs with low flows ranging from less than 10 gpm to about 150 gpm occur at or near stream level. Maximum flows range from less than 100 gpm to more than 100,000 gpm. Minimum flows generally occur in early fall, maximum flows in late winter. A few drilled wells in this area that intercept openings leading to springs may yield as much as the flow of the springs, but most wells are inadequate for domestic use with baileer or bucket (less than 100 gpd). Dug wells are inadequate for a domestic supply except in lowland areas bordering streams.

Water in Mississippian rocks of Meramec age
More than half the drilled wells in this area are adequate for a domestic supply with baileer or bucket (less than 100 gpd). Very few wells yield enough water for a domestic supply with power pump. Nearly all dug wells are inadequate for a domestic supply with baileer or bucket (less than 100 gpd).

Water in Mississippian rocks of Osage age
Yields of about half the drilled wells are adequate for a domestic supply with baileer or bucket (more than 100 gpd). A few wells in lowland areas bordering streams yield enough for a domestic supply with power pump (more than 500 gpd). Most wells penetrate perched or semiperched water bodies of small areal extent between layers of shale and limestone. In some wells, water from the perched water bodies migrates below any openings in the well during rainless periods. These wells are then dry until rainfall reestablishes a perched water body. Most dug wells obtain water from the contact of mantle and bedrock or from shallow perched water bodies in the bedrock. These wells usually go dry during extended dry periods in late summer and fall.

Water in rocks of Mississippian-Devonian age
Nearly all drilled and dug wells are inadequate for domestic use with baileer or bucket (less than 100 gpd) from the Chattanooga shale. Seepage springs are present along much of the area in which the Chattanooga shale crops out. Flows are generally less than 1 gpm, and most springs dry up during late summer and fall. Yields from fault zones generally are greater than shown by the availability pattern; however, some wells yield much less than is shown by the pattern.

Water in Recent and Pleistocene alluvium
Drilled wells in alluvium in the Ohio River valley may yield several hundred gpm (gallons per minute). Compound horizontal wells may yield as much as 5,000 gpm. Nearly all wells yield more than 500 gpd (gallons per day) and are adequate for domestic use. Alluvium in stream valleys tributary to the Ohio River is fine grained and thin; most drilled wells are inadequate for baileer or bucket (less than 100 gpd), whereas dug wells will generally yield enough for a baileer or bucket (more than 100 gpd).

Water in rocks of Pennsylvanian age
Nearly all drilled wells in the upland are inadequate for power pumps. About half the wells do not yield enough water for a domestic supply with baileer or bucket (less than 100 gpd). Drilled wells in lowland areas bordering streams generally yield enough water for a domestic supply with baileer or bucket (more than 100 gpd). Dug wells in lowland areas bordering streams yield enough water for a domestic supply with baileer or bucket (more than 100 gpd) if adequate storage is provided for peak needs. Very few dug wells are adequate for a domestic supply with power pump (more than 500 gpd).

Water in rocks of Pennsylvanian age
Less than half the drilled wells in this area yield enough water for a domestic supply with power pump (more than 500 gpd), but most are adequate for a domestic supply with baileer or bucket (more than 100 gpd). Drilled wells in lowland areas bordering streams will generally yield enough water for a domestic supply with baileer or bucket (more than 100 gpd). Dug wells in lowland areas bordering streams yield enough water for a domestic supply with baileer or bucket (more than 100 gpd) if adequate storage is provided for peak needs. Very few dug wells are adequate for a domestic supply with power pump (more than 500 gpd).

Water in Mississippian rocks of Chester age
Most drilled wells are adequate for a domestic supply with power pump (more than 500 gpd). Adequate wells range from about 100 to 300 feet in depth. Yields of as much as 100 gpm are obtained from wells penetrating fault zones. Shallow drilled wells are adequate only where water levels are close to perennial stream levels. Most dug wells are inadequate for a domestic supply (less than 100 gpd). An adequate domestic supply with bucket or baileer (more than 100 gpd) may be obtained from dug wells in some places close to streams. Most wells in the Leitchfield formation are inadequate for domestic use.