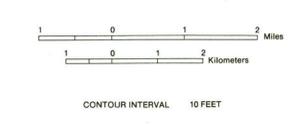
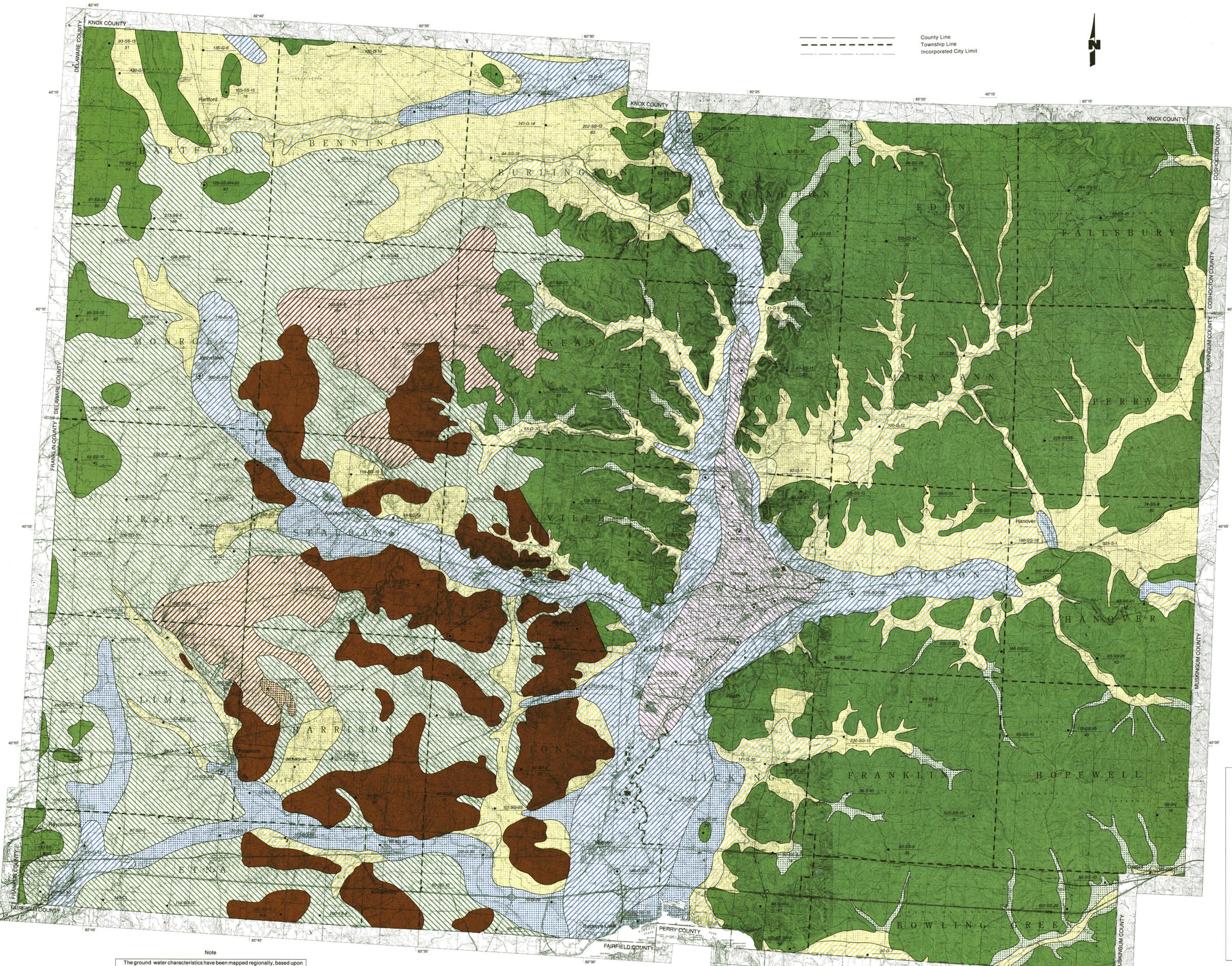


Ground Water Resources of LICKING COUNTY

by Glenn W. Hartzell



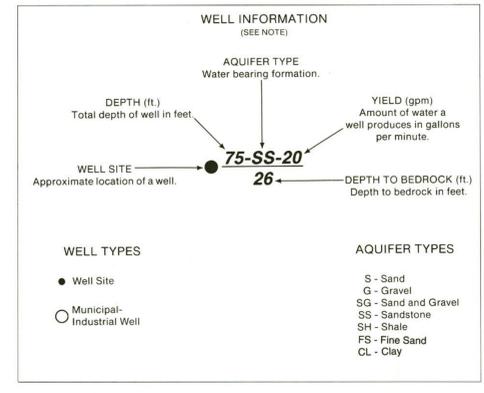
County Line
Township Line
Incorporated City Limit



Well Yields

- AREAS IN WHICH YIELDS OF MORE THAN 500 GALLONS PER MINUTE MAY BE DEVELOPED**
- Thick valley fill deposits of sand and gravel yield as much as 1,000 gallons per minute. Areas not receiving direct recharge from the Licking River may produce only 500-750 gallons per minute. Several aquifers are present at various depths. Test drilling and special design will be necessary to develop maximum yields.
 - White area outlines a zone contaminated with hydrocarbons (predominately gasoline) from the old refinery. The upper sand and gravel aquifer is the only contaminated zone. Prior to any drilling in this area, a professional hydrogeologist should be consulted.
- AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED**
- Sand and gravel deposits, generally well sorted, yield 200 to 500 gallons per minute. Highest yields are reported where recharge is available from nearby streams. Test drilling will be necessary to locate coarser deposits.
 - Sand and gravel deposits of variable thickness yield 100 to 200 gallons per minute. Long-term yields are limited by lack of immediate recharge and clay or silt layers separating sand and gravel zones.
- AREAS IN WHICH YIELDS OF 25 TO 100 GALLONS PER MINUTE MAY BE DEVELOPED**
- Relatively thin but well sorted sand and gravel deposits yield as much as 100 gallons per minute to properly developed, screened wells. Overlying or interbedded clay layers limit recharge and long-term yields. Well depths average less than 150 feet but may be over 250 in some areas.
 - Sand and gravel interbedded with clay may produce 25 to 50 gallons per minute. Sand and gravel lenses are generally less than ten feet thick and should be screened to develop maximum yields. Small diameter domestic wells may produce only 15 to 25 gallons per minute.
- AREAS IN WHICH YIELDS OF 10 TO 25 GALLONS PER MINUTE MAY BE DEVELOPED**
- Black Hand Sandstone in the eastern half of the county and sandstones of the lower Cuyahoga Formation along the western edge are the principal bedrock aquifers. The Black Hand Sandstone, sometimes referred to as the "Big Injun" or "Injun Sand" by local drillers, is a massive, coarse-grained quartz sandstone. Locally, where several hundred feet of sandstone is encountered, large diameter wells may produce as much as 100 gallons per minute. Domestic wells seldom yield over 25 gallons per minute. The lower Cuyahoga Formation consists of thin interbedded sandstone and shales. The major aquifer is the grey, fine-grained Berea Sandstone which yields a maximum of 25 gallons per minute. Domestic wells range from 5 to 15 gallons per minute at depths up to 150 feet. Depth to the bedrock in this area is generally less than 100 feet.
 - Sand and gravel interbedded with thick layers of clay and silt may produce as much as 15 gallons per minute. Fine sand and thin water producing zones necessitate the use of screens in domestic wells.
 - The western portion of the county may have as much as 400 feet of unconsolidated material in pre-glacial valleys. Wells not encountering sand and gravel can be expected to produce less than two gallons per minute from the bedrock at these great depths.
 - Small tributary valleys in the eastern half of the county may have as little as 50 feet of unconsolidated material overlying the bedrock. Thicker sand and gravel zones may produce up to 20 gallons per minute. If sand and gravel is not encountered then the well can be drilled into the bedrock for an adequate supply.
- AREAS IN WHICH YIELDS OF LESS THAN 10 GALLONS PER MINUTE MAY BE DEVELOPED**
- Sandy shale bedrock overlain by less than 100 feet of glacial material, mostly clay, yields generally less than five gallons per minute. Additional storage may be necessary to meet peak daily demands for domestic wells.
 - Thick deposits of clay and thin interbedded lenses of sand and gravel yield three to ten gallons per minute to properly developed, screened wells. Depth to bedrock may be over 300 feet. Wells not encountering sand and gravel produce less than three gallons per minute from the underlying shale.
 - Area in Beechwood Trails where overpumping of the sandy shale bedrock has reduced the yield of wells to less than one gallon per minute. The only sources of water are the very thin lenses of sand and gravel in the upper 200 feet of unconsolidated material.

Well Site Symbols



Note
The ground water characteristics have been mapped regionally, based upon interpretations of water well records and the area's geology and hydrology. Mapped well sites were selected as typical for the areas shown. Information regarding specific sites may be obtained from the Division of Water.

Published 1982
Reprinted 1992
Ohio Department of Natural Resources
Division of Water
Ground Water Resources Section
1939 Fountain Square
Columbus, Ohio 43224