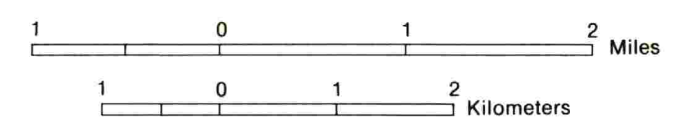


Ground-Water Resources of BROWN COUNTY

by David J. Sugar



CONTOUR INTERVAL 10 TO 20 FEET

- County Line
- - - - - Township Line
- Incorporated City Limit

Well Yields

AREAS IN WHICH YIELDS GREATER THAN 100 GALLONS PER MINUTE MAY BE DEVELOPED
 Permeable sand and gravel deposits adjacent to the Ohio River constitute the best ground-water areas in Brown County. Yields of as much as 700 gallons per minute have been reported where recharge is available from the river.



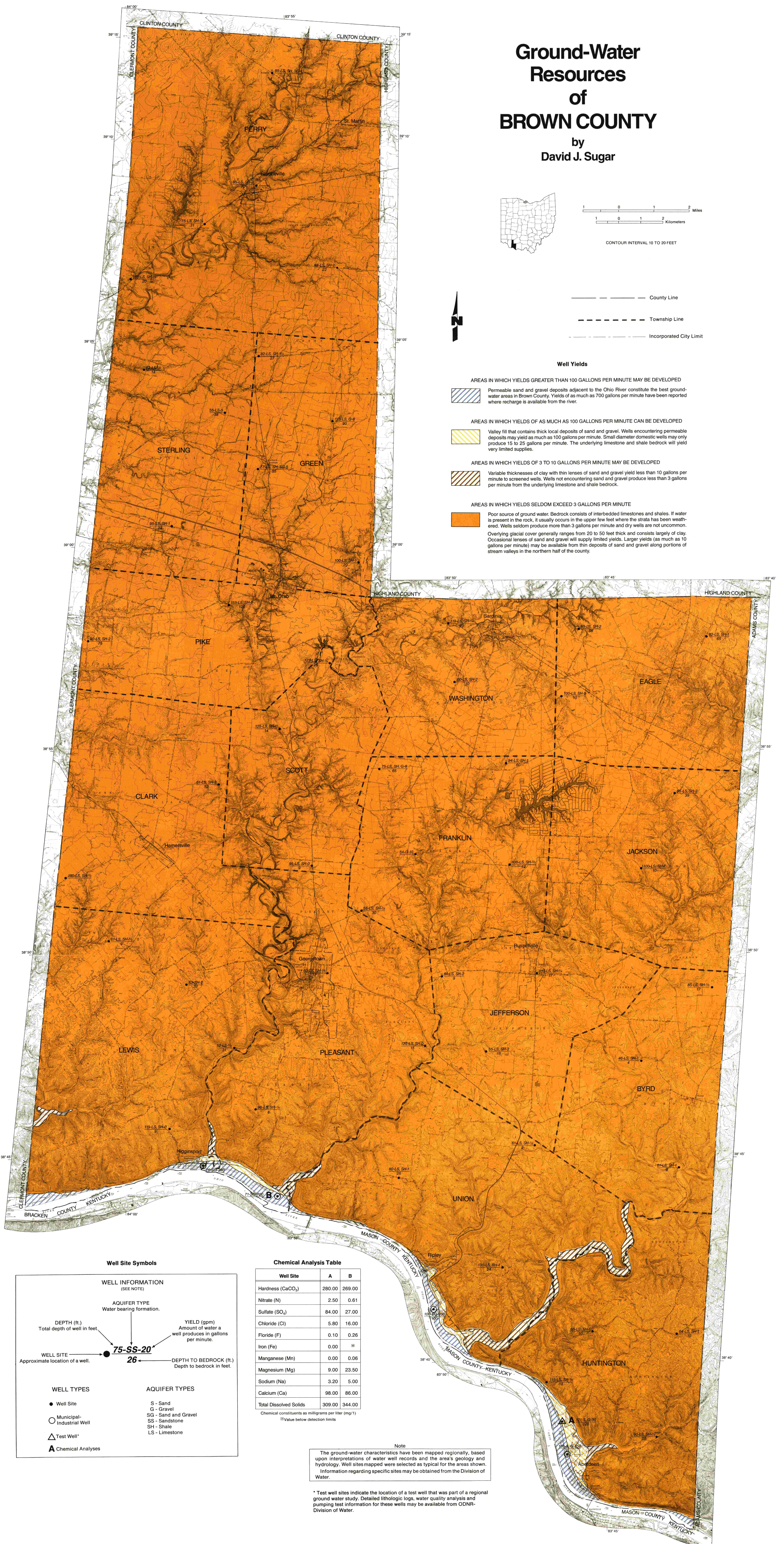
AREAS IN WHICH YIELDS OF AS MUCH AS 100 GALLONS PER MINUTE CAN BE DEVELOPED
 Valley fill that contains thick local deposits of sand and gravel. Wells encountering permeable deposits may yield as much as 100 gallons per minute. Small diameter domestic wells may only produce 15 to 25 gallons per minute. The underlying limestone and shale bedrock will yield very limited supplies.



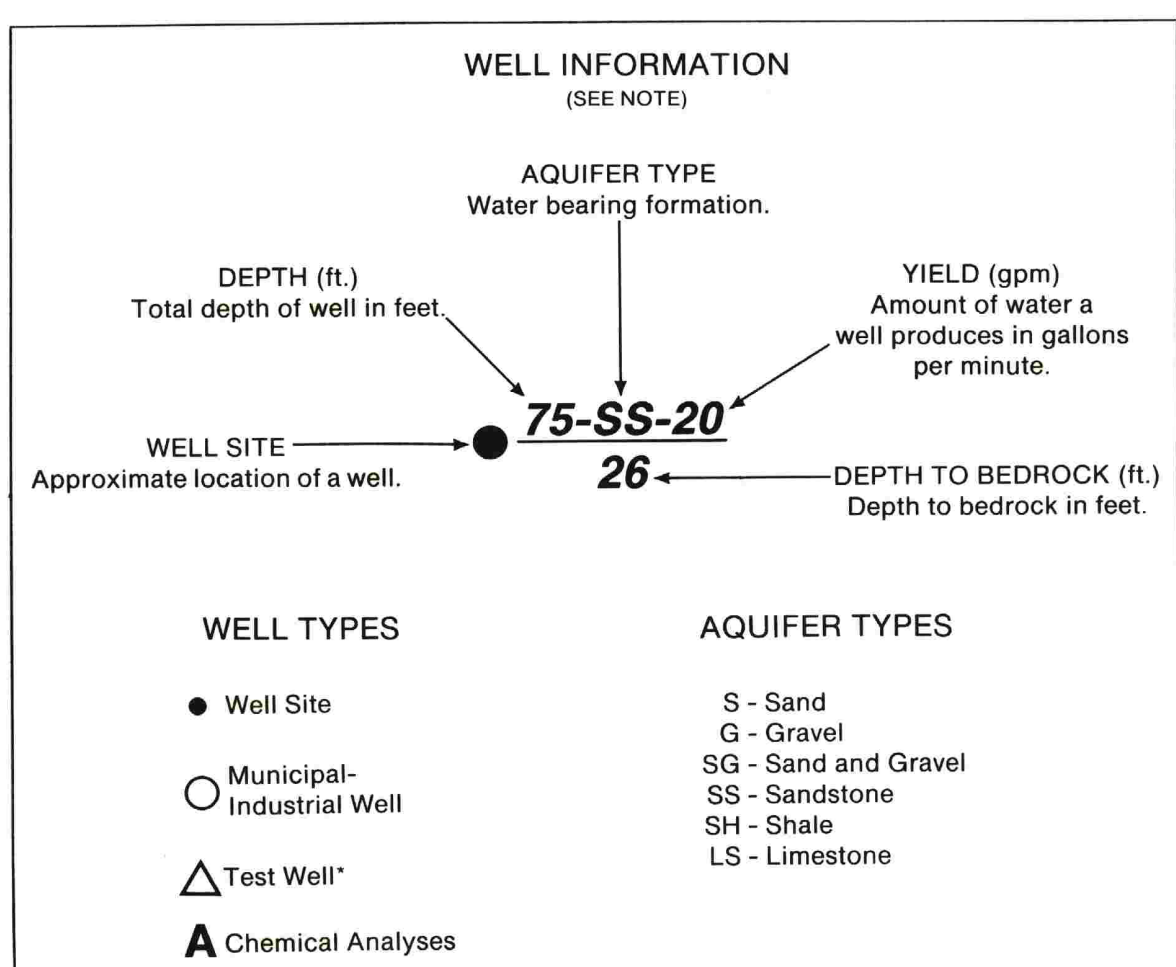
AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED
 Variable thicknesses of clay with thin lenses of sand and gravel yield less than 10 gallons per minute to screened wells. Wells not encountering sand and gravel produce less than 3 gallons per minute from the underlying limestone and shale bedrock.



AREAS IN WHICH YIELDS SELDOM EXCEED 3 GALLONS PER MINUTE
 Poor source of ground water. Bedrock consists of interbedded limestones and shales. If water is present in the rock, it usually occurs in the upper few feet where the strata has been weathered. Wells seldom produce more than 3 gallons per minute and dry wells are not uncommon. Overlying glacial cover generally ranges from 20 to 50 feet thick and consists largely of clay. Occasional lenses of sand and gravel will supply limited yields. Larger yields (as much as 10 gallons per minute) may be available from thin deposits of sand and gravel along portions of stream valleys in the northern half of the county.



Well Site Symbols



Chemical Analysis Table

Well Site	A	B
Hardness (CaCO ₃)	280.00	269.00
Nitrate (N)	2.50	0.61
Sulfate (SO ₄)	84.00	27.00
Chloride (Cl)	5.80	16.00
Fluoride (F)	0.10	0.26
Iron (Fe)	0.00	0.00
Manganese (Mn)	0.00	0.06
Magnesium (Mg)	9.00	23.50
Sodium (Na)	3.20	5.00
Calcium (Ca)	98.00	86.00
Total Dissolved Solids	309.00	344.00

Chemical constituents as milligrams per liter (mg/l)
 *Value below detection limits

Note

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

* Test well sites indicate the location of a test well that was part of a regional ground water study. Detailed lithologic logs, water quality analysis and pumping test information for these wells may be available from ODNR-Division of Water.