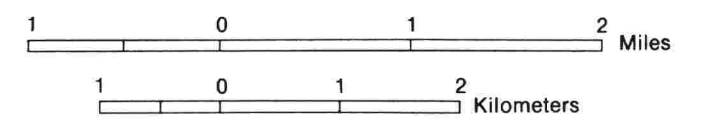


Ground Water Resources of MUSKINGUM COUNTY

by
Alfred C. Walker



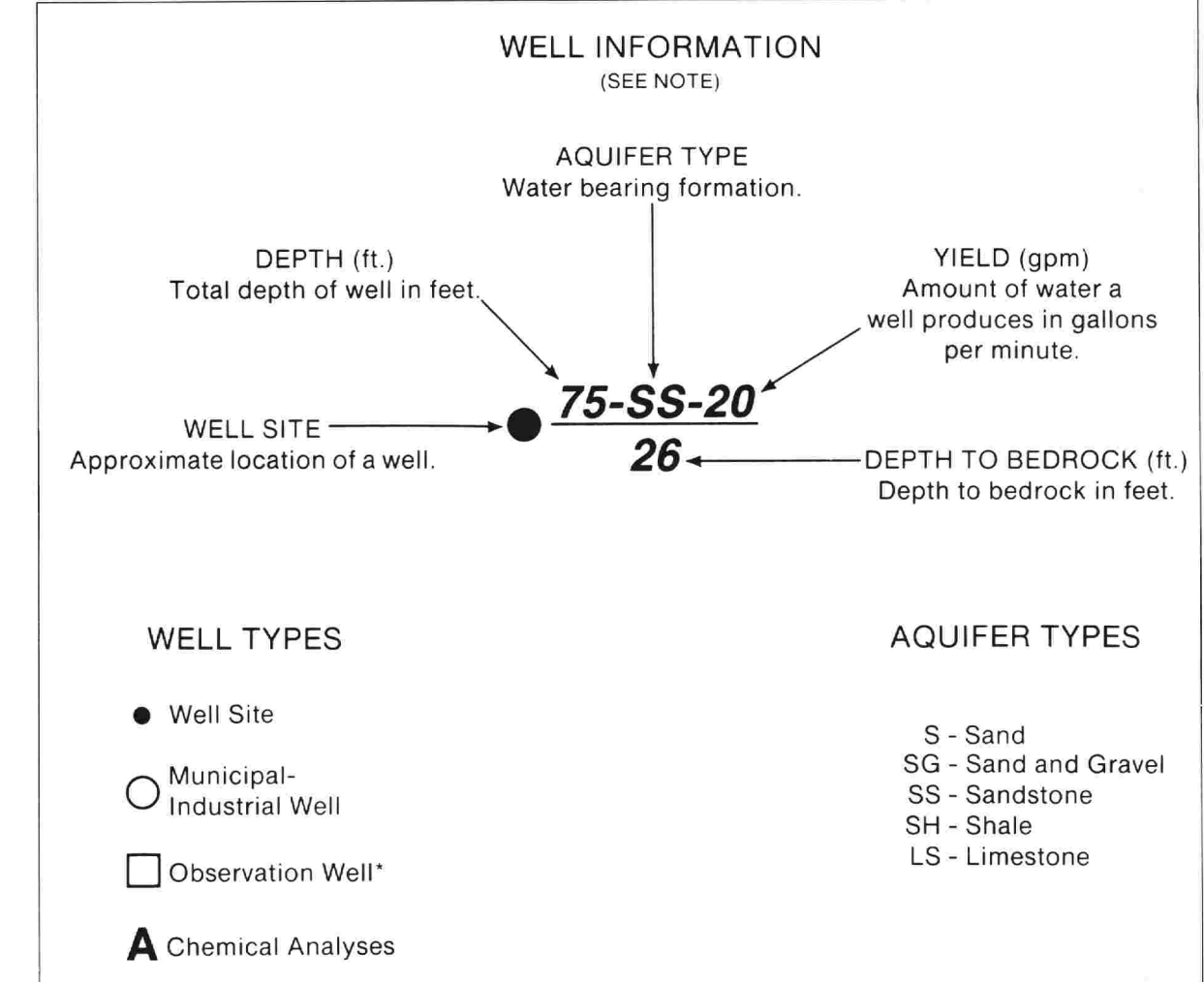
CONTOUR INTERVAL 20 FEET

County Line
Township Line
Incorporated City Limit

Well Yields

- AREAS IN WHICH YIELDS OF 500 OR MORE GALLONS PER MINUTE MAY BE DEVELOPED.**
 - Best ground water areas in Muskingum County. Large industrial and municipal supplies are available from thick, permeable sand and gravel deposits beneath portions of the Muskingum River floodplain.
- AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED.**
 - Permeable sand and gravel deposits beneath the valleys of the Muskingum River and Wakatomika Creek yield several hundred gallons per minute to properly constructed wells. Exploratory test drilling may be required to locate sufficient coarse water-bearing materials.
- AREAS IN WHICH YIELDS OF 25 TO 100 GALLONS PER MINUTE MAY BE DEVELOPED.**
 - Interbedded and interlensing deposits of sand, gravel, silt and clay may yield small industrial supplies of ground water. The thickness of these valley fill deposits ranges from 50 to more than 100 feet.
- AREAS IN WHICH YIELDS OF 10 TO 25 GALLONS PER MINUTE MAY BE DEVELOPED.**
 - Mississippian sandstones and lower Pennsylvanian sandstones and shales generally supply adequate farm and domestic ground water supplies. Well depths vary greatly, from less than 100 feet to more than 500 feet. Ground water is likely to be more highly mineralized in the deep wells (Note chemical analysis "C").
 - Ground water is obtained from valley fill containing sand and gravel deposits of limited thickness and extent. Wells not encountering significant sands and gravels must be drilled into the underlying bedrock.
 - Limited data suggests the possibility that ground water may be available from sand and gravel deposits within valley fill. Otherwise, wells must be developed in the underlying bedrock.
- AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED.**
 - Wells are developed in sandstones and shales. They average 150 feet deep and are generally adequate for domestic supplies. Deep wells, in excess of 400 feet, commonly produce salty water.
 - Fill, as much as 50 feet thick, along portions of stream valleys consists largely of clay with occasional thin lenses of sand or gravel which may yield domestic water supplies. Otherwise, wells must be drilled into the underlying bedrock.
- AREAS IN WHICH YIELDS SELDOM EXCEED 3 GALLONS PER MINUTE.**
 - Very limited supplies are available from wells drilled into alternating layers of shale and thin sandstone. The average well depth is 90 feet.
 - Well supplies are meager whether they are developed in the shallow fill of stream valleys or in the underlying sandstone and shale bedrock.

Well Site Symbols



Chemical Analysis Table

Well site	A	B	C	D	E
Aquifer	SG	SG	SS	SG	SG
Calcium (Ca)	—	127.0	38.0	79.0	115.0
Chloride (Cl)	2.0	84.0	670.0	67.0	55.0
Fluoride (F)	0.05	—	—	—	0.11
Iron (Fe)	1.5	0.55	5.1	0.3	0.61
Magnesium (Mg)	—	19.4	19.0	20.0	21.0
Manganese (Mn)	0.07	0.48	0.10	1.08	0.29
Sodium (Na)	—	47.6	530.0	46.0	25.0
Sulfate (SO ₄)	—	88.0	15.0	152.0	88.0

Chemical constituents as milligrams per liter (mg/l)

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.

* Observation well sites indicate the location of wells used to collect ground water level information. These wells are part of the State observation well network. Hydrographs of the water levels recorded in these and other State observation wells can be obtained through ODNR-Division of Water.