

# Ground-Water Resources of CHAMPAIGN COUNTY

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Richard F. Celeste, Governor  
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Index Map

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- AREAS IN WHICH YIELDS OF 500 TO 1000 GALLONS PER MINUTE MAY BE DEVELOPED.
  - Permeable sand and gravel adjacent to Mad River yields in excess of 1000 gallons per minute to properly constructed large diameter wells 60 to 95 feet deep.
- AREAS IN WHICH YIELDS OF 100 TO 300 GALLONS PER MINUTE MAY BE DEVELOPED.
  - Yields of as much as 300 gallons per minute may be developed from limestone aquifer at depths greater than 225 feet. Farm and domestic supplies of 5 to 15 gallons per minute are developed from thick glacial drift at depths of as much as 335 feet.
- Regionally extensive, thick permeable deposits of sand and gravel beyond the recharge influence of the Mad River. Extensive test drilling is recommended to locate coarse deposits at depths from 45 to 155 feet. If permeable deposits are not encountered, wells may be deepened, developing the underlying carbonate bedrock.
- Exceptionally thick deposits of fine sand, silt, and clay interbedded with lenses of permeable sand and gravel partially filling buried valleys. Greater yields than domestic supplies of 5 to 15 gallons per minute may be anticipated. Properly screened wells yield as much as 250 gpm at depths of as much as 200 feet although glacial deposits are more than 300 feet thick.

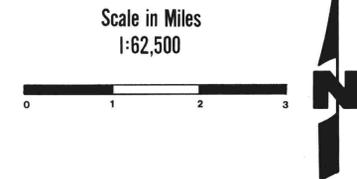
- AREAS IN WHICH YIELDS OF AS MUCH AS 100 GALLONS PER MINUTE MAY BE DEVELOPED.
  - Glacial drift of variable thickness ranging up to 275 feet yields as much as 35 gallons per minute. Underlying limestone aquifer yields as much as 100 gallons per minute at depths of less than 225 feet.
- Thick deposits of fine sand, clay and gravel interbedded with thin lenses of sand and gravel yield domestic supplies at depths of less than 155 feet.
- AREAS IN WHICH YIELDS OF 10 TO 20 GALLONS PER MINUTE MAY BE DEVELOPED.
  - Wells are developed in limestone bedrock at depths usually greater than 125 feet. Domestic supplies are often developed in surficial glacial deposits at depths of less than 90 feet.
- AREAS IN WHICH YIELDS OF 3 TO 8 GALLONS PER MINUTE MAY BE DEVELOPED.
  - Thin layers of sand and gravel interbedded in clayey till and overlying thick non-water-bearing shale bedrock yield satisfactory domestic supplies. Wells developed at depths greater than 200 feet encounter limestone but presence of hydrogen sulfide noted in bedrock wells.
  - Thin layers of sand and gravel encountered at depths of less than 175 feet. Meager ground-water supplies developed at greater depths.

SITE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Depth	360	31	420	143	350	92	101	145	130	271	71	215	160	128	120	310	198	100
Iron	1.4	.04	.33	2.3	2.1	4.2	4.5	.94	.83	.92	.00	.05	2.3	4.5	.18	.59	1.1	2.3
Hardness as CaCO <sub>3</sub>	350	443	380	435	380	368	374	416	332	372	364	370	333	265	327	340	391	393
Dissolved Solids	378	477	396	459	420	382	393	441	390	427	381	405	359	354	357	368	394	414
Sulfates	18	51	22	48	53	35	59	39	15	50	52	59	18	5.4	13	16	24	60
Critical Pumping Level	235	-	180	-	188	-	-	-	-	-	-	-	-	-	118	-	-	-
Aquifer	LS	SG	LS	LS	LS	G	G	LS	G	LS	G	LS	LS	G	G	LS	SG	G

Chemical Constituents as Milligrams per Liter (mg/l)  
 1. N. Lewisburg  
 2. St. Paris  
 3. Urbana  
 4. Urbana  
 5. Christiansburg  
 6. Mechanicsburg

Depth (ft.) - Water-bearing Formation - Yield (gpm) / 185-LS-10 / 35  
 Depth to Bedrock (ft.)

- Water Well
- Municipal-Industrial Well
- S-Sand
- FS-Fine Sand
- CL-Clay
- G-Gravel
- Well Site
- Chemical Analyses
- Test Well
- SH-Shale
- LS-Limestone



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

