

PENNSYLVANIA

MISSISSIPPIAN

DEVONIAN

SILURIAN

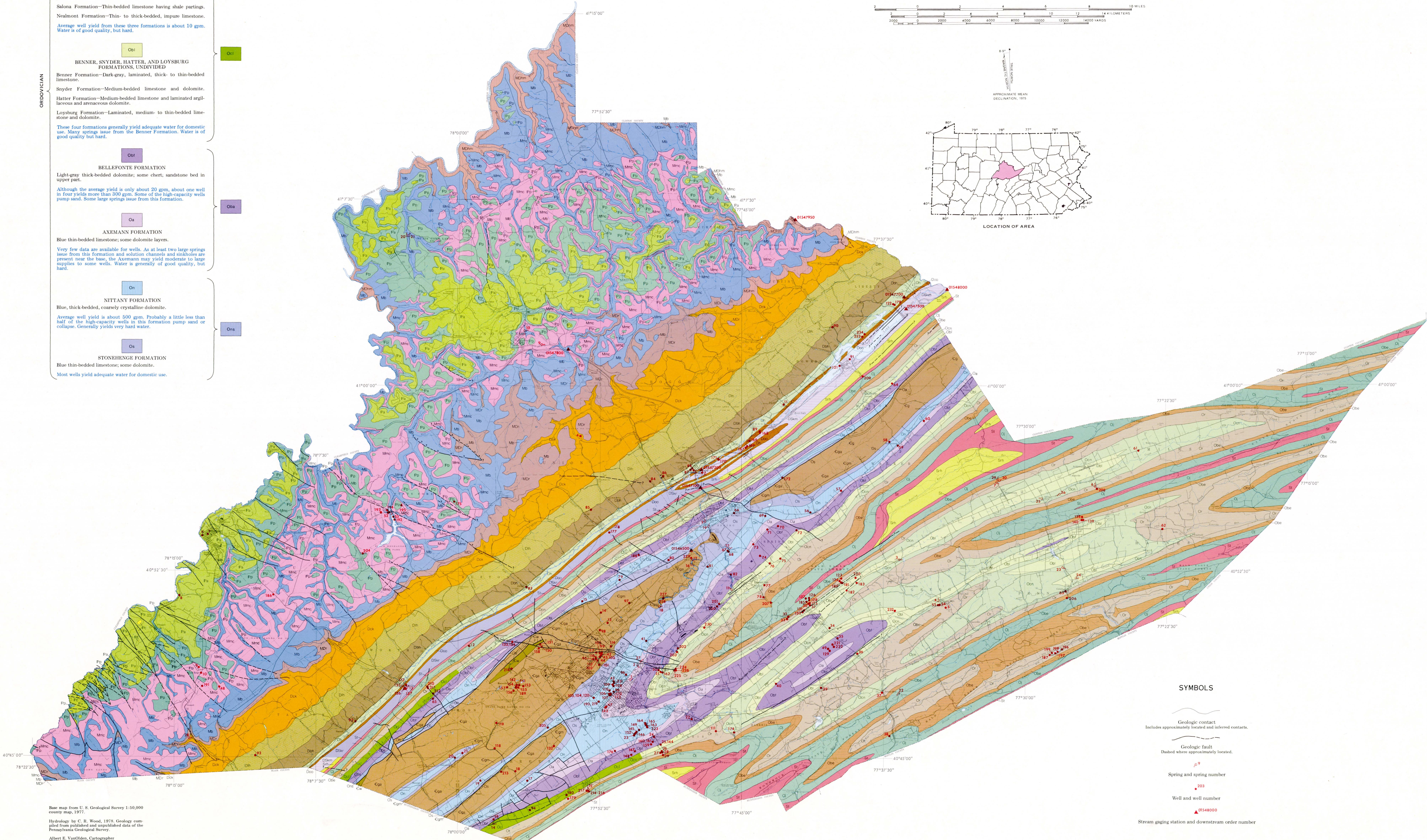
EXPLANATION

- Pc**
CONEMAUGH GROUP
Sandstone, shale, limestone, thin coal beds, and red beds.
Probably lies entirely above the water table.
- Pu**
ALLEGHENY GROUP
Sandstone (in thick channels in places), shale, limestone, and several commercial-grade coal beds.
Average well yield is about 20 gpm. Usually yields water high in iron concentration.
- Pp**
POTTSVILLE GROUP
Sandstone, shale, and several thin coal beds.
Based on limited data this is probably a fair aquifer. Well yields may average about 100 gpm. Often yields water high in iron concentration.
- Mmc**
MAUCH CHUNK FORMATION
Red and green shale.
Yields small supplies of water adequate for domestic use. Water is generally of good quality.
- Mb**
BURGON SANDSTONE
Thick-bedded, coarse-grained, micaceous, slightly arkosic sandstone at top; red and green shale and thin beds of sandstone below.
Average well yield is about 70 gpm. Some wells located in valleys yield several hundred gallons per minute. Water is soft.
- MDr MDhm**
ROCKWELL FORMATION/HUNTLEY MOUNTAIN FORMATION (Berg and Edmunds, 1979)
Gray and greenish-gray, fine- to coarse-grained sandstone, siltstone, and shale containing grayish-red interbeds.
Water-bearing properties are probably similar to those of underlying Catskill Formation.
- Dck**
CATSKILL FORMATION
Shale and mudstone, mostly red; thick-bedded sandstone, mostly red or brown.
Average well yield is about 50 gpm. Water is generally of good quality.
- Dih**
LOCK HAVEN FORMATION
Mostly green or chocolate-brown and green sandstone; a few beds of conglomerate, chocolate-brown in upper part.
Generally yields adequate supply of water for domestic use. Average well yield is about 25 gpm. Water is generally of good quality.
- Dsh**
BRALLIER AND HARRELL FORMATIONS, UNDIVIDED
Brallier Formation—Green shale and thin, evenly bedded, fine-grained, green or gray sandstone.
Generally yields adequate supplies of water for domestic use; may yield moderate supplies.
Harrell Formation—Soft gray fissile shale; about 60 feet of black fissile shale at base (Burket Member).
Poor aquifer. Some wells fail to yield adequate domestic supplies.
- Dh**
HAMILTON GROUP
Mahantango Formation—Olive-green shale; thin fine-grained sandstone; 0 to 50 feet of gray limestone and shale at top (Tully Member).
Average well yield is about 80 gpm. Some wells yield water having high concentrations of hydrogen sulfide.
Marcellus Formation—Black fissile shale.
Water-bearing properties are unknown.
- Dcc**
ONONDAGA AND OLD PORT FORMATIONS, UNDIVIDED
Onondaga Formation—Greenish-blue shale and dark-blue to black, medium-bedded limestone.
Probably a fair aquifer but too thin to be important.
Old Port Formation consists of four members as follows:
Ridgely Member—Coarse-grained, calcareous, brown to white, fossiliferous sandstone.
Shriver Member—Thin-bedded siliceous limestone, shale, calcareous sandstone, and chert.
Corriganville Member—Medium-gray limestone and light-gray chert.
New Creek Member—Coarsely crystalline, medium-dark-gray, massive-bedded limestone.
Well yields range from 5 gpm to more than 500 gpm. Average yield is about 200 gpm, about half of the wells drilled in the Ridgely and Shriver Members collapse if they are not supported by screens or slotted casings. Water from the Corriganville and New Creek Members is very hard, and in some wells the sulfate concentration may be too high for most uses.
- DSkm**
KEYSER, TONOLOWAY, WILLS CREEK, BLOOMSBURG, AND MIFFLINTOWN FORMATIONS, UNDIVIDED
Keyser Formation—Dark gray, thick-bedded, crystalline to nodular limestone, thin-bedded and shaly near the top.
Well yields are similar to those given above for the Old Port Formation. Sulfate concentrations in water from some wells deeper than 200 feet are too high for most uses.
Tonoloway Formation—Dark thin-bedded limestone.
Water-bearing properties are probably similar to those for the Keyser Formation above.
Wills Creek Formation—Olive-gray and yellow calcareous shale.
Average well yield is more than 200 gpm, but more than half of the wells deeper than 200 feet yield water having sulfate concentrations in excess of 200 mg/l. Some wells yield water containing objectionable amounts of hydrogen sulfide.
Bloomsburg Formation—Red and gray shale.
Wells generally yield adequate amounts of water for domestic use. The deeper wells will probably yield water of poor quality.
Mifflintown Formation—Olive-gray and yellowish-brown shale interbedded with medium-gray to dark-gray limestone. Interbedded sandstone and limestone at base.
Yields small to moderate supplies to drilled wells. Water from deep wells may be too hard for most uses.
- Sn**
ROSE HILL FORMATION
Olive-gray shales weathering pale yellowish brown. Interbedded thin sandstones and limestones.
Generally yields small supplies of soft water adequate for domestic use. Wells located on the high ridges near the gaps may yield less than 1 gpm.
- Sr**
TUSCARORA FORMATION
Hard, thick-bedded, white or gray quartzite sandstone.
Generally yields small supplies of soft water adequate for domestic use. Wells located on the high ridges near the gaps may yield less than 1 gpm.

- Oj**
JUNIATA FORMATION
Dominantly red, fine-grained sandstone, siltstone, and shale.
Average well yield is about 25 gpm. Water is soft.
- Obe**
BALD EAGLE FORMATION
Brown to gray, fine- to coarse-grained sandstone.
Average well yield is about 20 gpm. Water is soft.
- Or**
REEDSVILLE FORMATION
Dark-gray to brownish-gray shale; somewhat calcareous near the base; sandy near the top.
Average well yield is about 30 gpm, and yields range from 10 to 180 gpm. Water is generally of good quality and soft to moderately hard.
- Ocn**
COBURN, SALONA, AND NEALMONT FORMATIONS, UNDIVIDED
Coburn Formation—Thin-bedded limestone containing shale interbeds.
Salona Formation—Thin-bedded limestone having shale partings.
Nealmont Formation—Thin- to thick-bedded, impure limestone.
Average well yield from these three formations is about 10 gpm. Water is of good quality, but hard.
- Ocl**
BENNER, SNYDER, HATTER, AND LOYSBURG FORMATIONS, UNDIVIDED
Benner Formation—Dark-gray, laminated, thick- to thin-bedded limestone.
Snyder Formation—Medium-bedded limestone and dolomite.
Hatter Formation—Medium-bedded limestone and laminated argillaceous and arenaceous dolomite.
Loysburg Formation—Laminated, medium- to thin-bedded limestone and dolomite.
These four formations generally yield adequate water for domestic use. Many springs issue from the Benner Formation. Water is of good quality but hard.
- Obr**
BELLEFONTE FORMATION
Light-gray thick-bedded dolomite; some chert; sandstone bed in upper part.
Although the average yield is only about 20 gpm, about one well in four yields more than 300 gpm. Some of the high-capacity wells pump sand. Some large springs issue from this formation.
- Oa**
AXEMANN FORMATION
Blue thin-bedded limestone; some dolomite layers.
Very few data are available for wells. As at least two large springs issue from this formation and solution channels and sinkholes are present near the base, the Axemann may yield moderate to large supplies to some wells. Water is generally of good quality, but hard.
- On**
NITTANY FORMATION
Blue, thick-bedded, coarsely crystalline dolomite.
Average well yield is about 500 gpm. Probably a little less than half of the high-capacity wells in this formation pump sand or collapse. Generally yields very hard water.
- Os**
STONEHENGE FORMATION
Blue thin-bedded limestone; some dolomite.
Most wells yield adequate water for domestic use.

CAMBRIAN

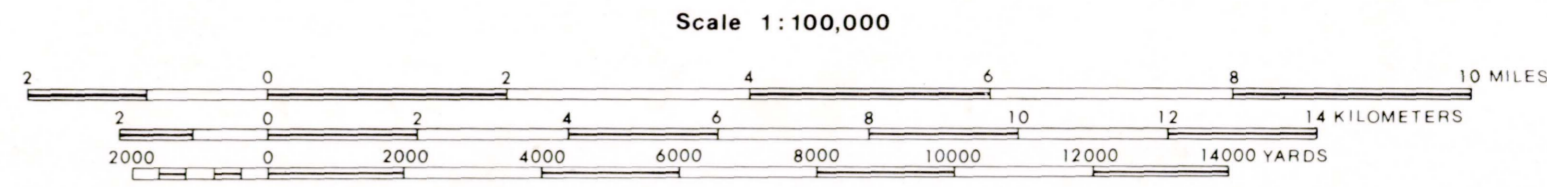
- Cgm**
Cg
GATESBURG FORMATION
Mines Member (Cgm)—Dark-gray coarse-grained dolomite and subordinate light-gray fine-grained dolomite. Abundant oolitic chert.
Other members (Cga) are as follows:
Upper sandy member—Dolomite and interbedded orthoquartzite and sandy dolomite.
Ore Hill Member—Dark-gray dolomite.
Lower sandy member—Dolomite and interbedded orthoquartzite and sandy dolomite.
Wells in the upper sandy member have an average yield of 415 gpm. However, more than half of the high-yielding wells in this unit pump sand or collapse. Not suited to the development of domestic supplies because of the large amounts of casing required and high cost of construction and development. Water is generally of good quality but hard. Very few data are available for the other members of the Gatesburg Formation, but the Mines and lower sandy members may both be good aquifers.
- Cw**
WARRIOR FORMATION
Blue impure limestone and dolomite; thin sandy partings.
Data are available for only one well. Based on this data and the lithology of this formation, the Warrior is probably a poor aquifer.



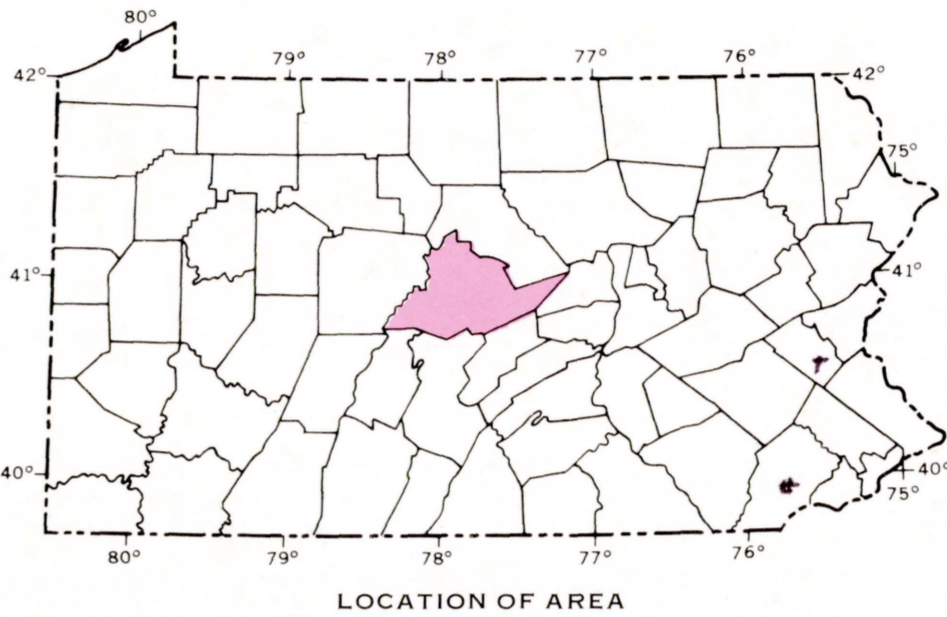
GEOLOGIC MAP OF CENTRE COUNTY, PENNSYLVANIA,
SHOWING THE LOCATION OF WELLS, SPRINGS,
AND STREAM GAGING STATIONS

BY CHARLES R. WOOD

1980



8 1/2°
APPROXIMATE MEAN
DECLINATION, 1975



SYMBOLS

- Geologic contact
Includes approximately located and inferred contacts.
- Geologic fault
Dashed where approximately located.
- Spring and spring number
p. 9
- Well and well number
203
- Stream gaging station and downstream order number
01548000