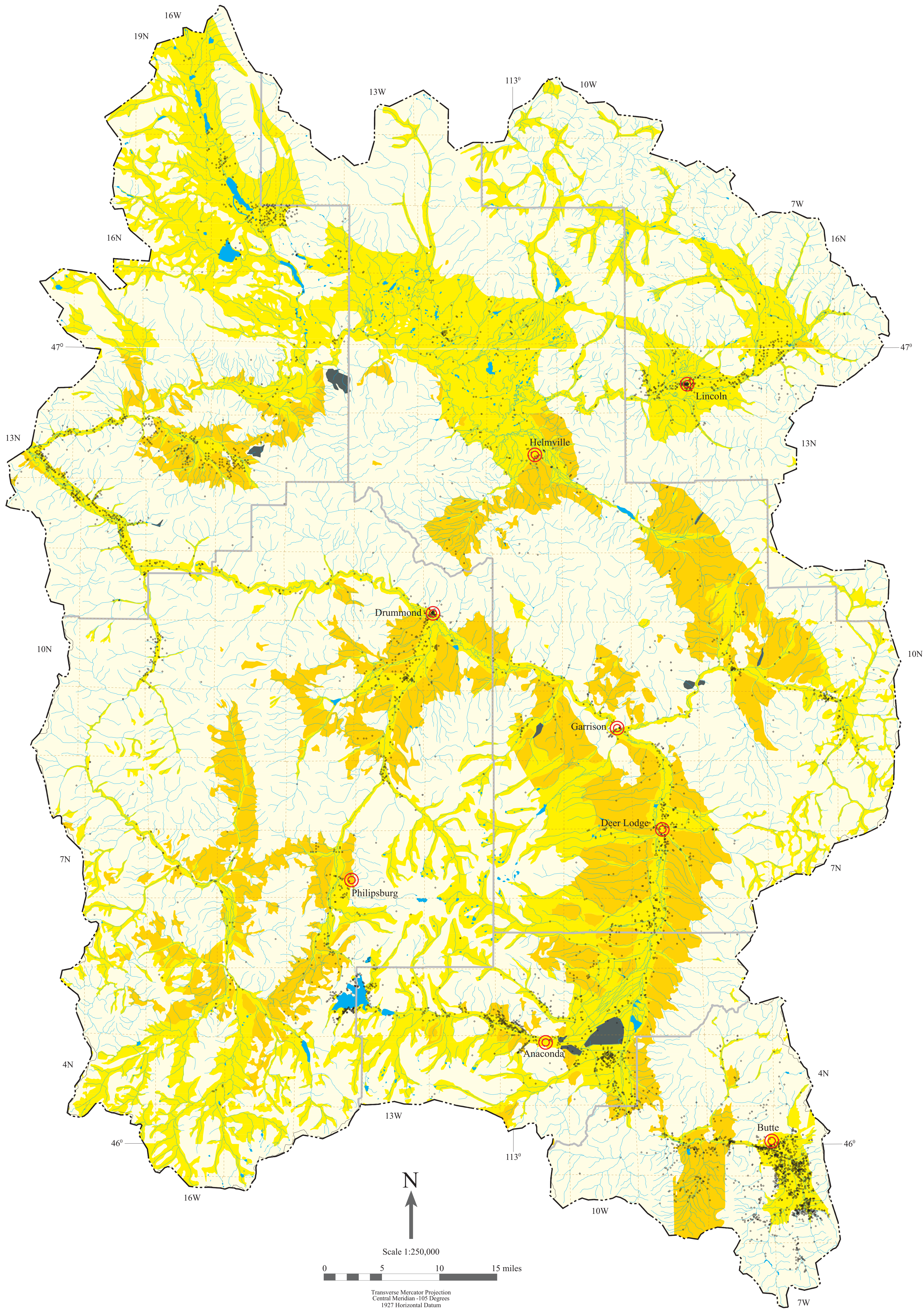


Generalized Map Showing the Distribution of Aquifers and Water Wells  
in Part of the Upper Clark Fork River Basin

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Explanation

- Alluvial deposits are well to poorly sorted clay, silt, sand, and gravel materials usually adjacent to present-day streams. In the higher altitude parts of the map area, glaciers or streams that flowed from melting glaciers deposited the materials. Alluvial deposits are generally less than 50 ft thick and contain aquifers within sand and gravel zones. Ground water generally is unconfined and is often hydraulically connected to adjacent streams. Water quality is usually good. Well yields range from 5 to more than 1,500 gallons per minute (gpm).
- Tertiary basin-fill deposits are unconsolidated to poorly consolidated sediments containing zones of sand and gravel. Tertiary basin-fill materials are older than the alluvial deposits, generally finer grained, and are as much as several thousand feet thick. Aquifers occur within the sand and gravel zones. Ground water at depths greater than about 100 ft is often confined. Water quality is variable. Well yields generally are less than 20 gpm, but some wells yielding more than 1,000 gpm have been reported.
- Bedrock within the basin includes many types ranging from sedimentary rocks such as shale, sandstone, and limestone, to intrusive and extrusive igneous rocks such as granite and rhyolite. Ground water primarily occurs in fractures within the bedrock materials, and may be confined or unconfined. Where streams are in direct contact with the bedrock, a hydraulic connection may exist. Water quality generally is good. Well yields typically are low and depend on the extent and characteristics of the fractures intercepted by the well.

- Mine and mill tailings
- Lakes, reservoirs, and streams
- Town
- Wells

Well Distribution

Well locations were retrieved from records of water wells on file at the Groundwater Information Center (GWIC) at the Montana Bureau of Mines and Geology (MBMG); well records were current as of 1996. The file contains records for about 7,300 wells in the Upper Clark Fork River basin. Few well locations have been field verified.

Disclaimer

MBMG has prepared this map to assist the Upper Clark Fork River Basin Steering Committee in developing plans to manage the water resources of the basin. Descriptions of aquifers are based on interpretations of geologic maps and hydrogeologic data. This map should not be used to evaluate groundwater resources at a specific location.

References

- Area 1.** Geologic information is from an unpublished digital version of Mudge, M.R., Earhart, R.L., Whipple, J.W., and Harrison, J.E., 1982. Geologic and structure maps of the Choteau 1° x 2° Quadrangle, western Montana. U.S. Geological Survey Miscellaneous Investigations Series Map I-1300, scale 1:250,000.
- Area 2.** Digital compilation of Wallace, C.A., 1987. Generalized geologic map of the Butte 1° x 2° Quadrangle, Montana. U.S. Geological Survey Mineral Investigations Series Map MF-1925, scale 1:250,000.
- Area 3.** Digital compilation of Ruppel, E.T., O'Neill, J. M., and Lopez D. A., 1993. Geologic map of the Dillon 1° x 2° Quadrangle, Idaho and Montana. U.S. Geological Survey Miscellaneous Investigations Series Map I-1803-11, scale 1:250,000.

