



**GROUNDWATER TEMPERATURES OF MISSOURI  
OSAGE PLAINS PHYSIOGRAPHIC REGION**

Geology and Digital Compilation by  
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**MAP DESCRIPTION**

The Osage Plains has the potential for the least potential groundwater resources in the state. Hydrologically, this province is west of the freshwater-saline water transition zone. The Springfield Plateau, Ozark and St. Francois aquifers are very deep in this area and the water they contain is too highly mineralized for most uses. The bedrock of the region is Pennsylvanian-age underlain by Cambrian, Ordovician and Mississippian units. These older units also contain highly mineralized water and are generally not usable.

Groundwater temperatures throughout the map range from mid-50°F to mid-60°F in the uppermost aquifer. The temperatures are permissible for GSHW system use. Areas of higher and lower temperatures are scattered throughout the map area and range from upper 40°F values to values higher than 80°F. No values reached 90°F.

Temperatures of 70°F or higher are found within areas in Cass and Vernon counties. Preliminary oil and gas wells deeper than 1,000 feet. Three oil and gas wells in southeastern Bates County are higher than 80°F. An individual higher temperature well (70°F) is in Barton County.

**DATA COLLECTION**

New data collected included existing municipal and commercial water wells and springs. Pre-existing data used in this project was collected from multiple sources for great detail: Missouri Department of Natural Resources, Division of Geology and Land Survey (DGLS) written data files, US Geological Survey (USGS) National Water Information System (NWIS) electronic data files, US Environmental Protection Agency (USEPA) STORET electronic data files, and the Reduction (PCOR) Partnership data was collected in part with funding from the U.S. Department of Energy (DOE) through the PCOR regional partnership. Spring temperatures were obtained from DGLS files. Data from landfills and other records was obtained from the Missouri Department of Natural Resources, Solid Waste Management Program records.

Temperature data on the map was contoured to all data collected at a depth of less than 1,000 feet, in intervals of 10°F. With the exception of the inset data points that are not labeled are deeper than 1,000 feet and were not contoured.

**ACKNOWLEDGEMENTS**

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**Legend**

<b>Data Points</b>	<b>Data Temperature (Degrees Fahrenheit)</b>	<b>Contour Temperature (Degrees Fahrenheit)</b>	<b>Base Data</b>
● Collected	40-49	50	Osage Plains
▲ Oil and Gas	50-59	60	Roads
■ PCOR	60-69	70	Rivers
⊕ Springs	70-79	80	Lakes
◆ USGS	80+		Municipal
60 450 Temperature Depth			County
			State

