

December 2010

What is the Ozark Plateau Aquifer system?

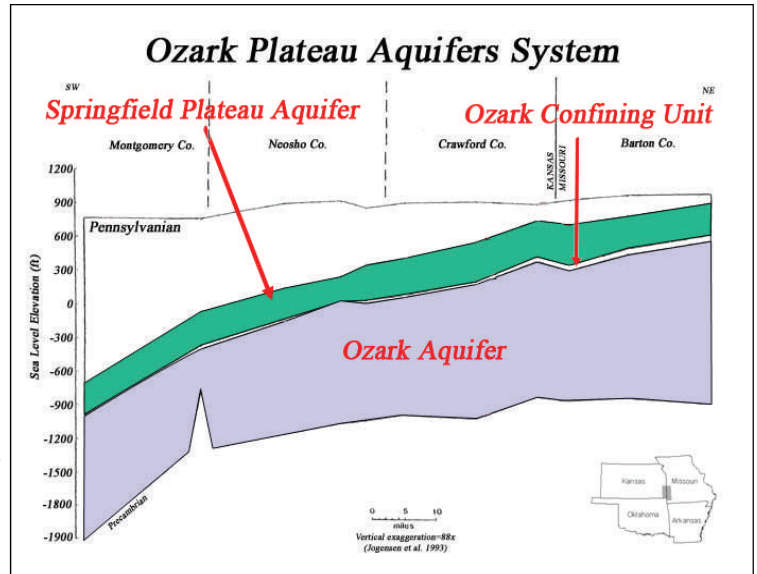
The Ozark Plateau aquifer system is an important source of water for southeast Kansas, southwest Missouri, northeast Oklahoma and a small part of northwest Arkansas. The system consists of two aquifers that have a discontinuous confining unit. The upper aquifer is the Springfield Plateau aquifer; the lower is the Ozark aquifer.

Concerns About Quantity and Quality

Concerns about the quantity and quality of groundwater in the aquifer system prompted the chief engineer to designate a moratorium area in 2004 on new groundwater appropriations from the system per K.A.R. 5-3-29. The moratorium exempted certain minor uses and allowed moratorium term permits from the Ozark Plateau aquifer until further studies could be completed. The study consists of a U.S. Geological Survey groundwater model.

USGS Groundwater Flow Model

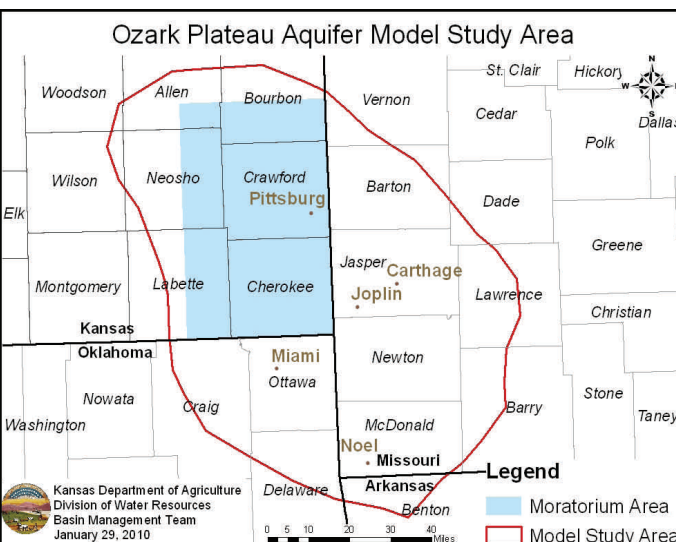
The comprehensive model of the Ozark Plateau aquifer was completed in 2009 by the U.S. Geological Survey. Using MODFLOW software, the model is able to better assess the effect that increased water use has on the long-term availability of groundwater within the tri-state area. From this model, Division of Water Resources staff determined that additional groundwater beyond what is currently pumped is available for appropriation in southeast Kansas.



DWR Model Runs and Safe Yield Determination

DWR staff used the USGS model to determine the additional amount of water available to meet safe yield of the Ozark Plateau aquifer in Kansas. Safe yield for this area is defined as the use that can be sustained without reducing storage in the Ozark aquifer by more than 25 percent over the next 100 years.

Based on results from several modeled growth scenarios, the chief engineer determined safe yield for the Ozark Plateau aquifer to be at least 36,000 acre-feet per year, about three times the amount currently authorized.



These findings indicate that the moratorium term permits allowed since 2004 do not cause safe yield to be exceeded and can become regular appropriations, and that the moratorium can be lifted, re-opening the area to new appropriations. This will be done by regulation to be developed in 2011.

In addition to the overall safe yield limit, a localized 2-mile safe yield test will also be performed, so the local limitation will vary. In this way, additional growth may be possible within a reasonable boundary.

For more information about the Ozark Plateau aquifer system, including the Ozark Hydrologic Report, MODFLOW Model Results, and Safe Yield Determination, please visit our website at www.ksda.gov/subbasin/content/317/cid/1628.