

## Neosho River near Langley

Station AT190500 (121600020170-001AT) is a permanent ambient trend monitoring station on the Neosho River below Grand Lake and above Lake Hudson. Situated in the northeastern portion of Mayes County, the site was established south of the town of Langley on State Highway 82. The station is positioned near the midpoint of stream segment 121600020170 and is classified within the Lower Neosho River 8-digit HUC watershed (11070209). Water enters the stream system from Grand Lake and several tributaries including Big Cabin Creek, among others.

This station on the Neosho River has been active for all water quality variables since November of 1998. The following assessment of beneficial uses is based on data collected from May of 2002 through April of 2007. Analysis includes continuous dissolved oxygen data collected during 2006-2007. For purposes of reporting, this station is representative of the Neosho River from the confluence of Grand Lake (95.1426, 36.4415) downstream to confluence of the Neosho River with Lake Hudson (95.0408, 36.4690). As per Appendix A, Table 1 of OAC 785:45, this water quality management segment is assigned the following designated beneficial uses: 1) Public and Private Water Supply (PPWS), 2) Warm Water Aquatic Community—Fish and Wildlife Propagation (WWAC), 3) Agriculture—Class I Irrigation (AG), and 4) Primary Body Contact—Recreation (PBCR).

The PPWS beneficial use is supported. The WWAC beneficial use is not supported for dissolved oxygen. Only three (3) of the forty-six (46) discreet dissolved oxygen collections were below the seasonally based dissolved oxygen criteria. However, continuous dissolved oxygen data were below the dissolved oxygen screening limit of 4 mg/L during 1807 of 9307 (19.4%) of the averaged hourly readings. Turbidity, pH, and toxicant samples met the criteria prescribed in the WWAC beneficial use. The AG beneficial use is supported for total dissolved solids (TDS), chlorides, and sulfates. The PBCR beneficial use is supported for fecal coliform, *E. coli* and enterococci samples. This segment of the Neosho River is not nutrient-threatened. The total phosphorus and nitrate/nitrite median values were below the threshold medians of 0.36 mg/L and 5.0 mg/L, respectively. Furthermore, the mean sestonic chlorophyll-a concentration (5.2 mg/M<sup>3</sup>) produced a TSI of 47, which is below the threshold TSI of 62.