

## Deep Fork River near Stroud

Station AT242500 (520700040010-001AT) is a permanent ambient trend monitoring station located on the Deep Fork River in Oklahoma. Situated in the east central portion of Lincoln County, the site was established south of the city of Stroud on US Highway 377. The station is positioned near the terminal end of stream segment 520700040010 and is classified within the Deep Fork River 8 digit HUC watershed (11100303). Water enters the stream system from Browns Lake and Lake Todd and from several tributaries including Quapaw Creek, Robinson Creek, Dry Creek, Deer Creek, and Grayhorse Creek, among others.

This station on the Deep Fork 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. For purposes of reporting, this station is representative of the Deep Fork River from the confluence of Quapaw Creek (96.8059, 35.6287) downstream to confluence of Todd Lake with the Deep Fork River (96.6220, 35.6554). As per Appendix A, Table 5 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 II Irrigation (AG), and 4) Primary Body Contact—Recreation (PBCR).

The PPWS beneficial use is not supported. Of the eleven (11) chromium samples collected, two (2) of the concentrations (or 18%) exceeded the prescribed of 50 ug/L. The WWAC beneficial use is not supported. Of the 11 lead samples collected, 2 of the concentrations (or 18%) exceeded the prescribed, hardness-dependant chronic criterion of 10.45 ug/L. Of the 11 chromium samples collected, 2 of the concentrations (or 18%) exceeded the prescribed chronic criterion of 50 ug/L. Of the twenty-eight (28) turbidity samples, seven (7) samples (or 25%) exceeded the numerical criteria of 50. Dissolved oxygen and pH samples met the criteria prescribed in the WWAC beneficial use. The AG beneficial use is supported for total dissolved solids, chlorides, and sulfates. The PBCR beneficial use is not supported. Of the twenty-nine (29) enterococci concentrations, ten (10) samples exceeded the prescribed screening level of 406 cfu/100mL, and the geometric mean (252.9 cfu/100mL) exceeded the prescribed mean standard of 33 cfu/100mL. Of the thirty (30) fecal coliform concentrations, 10 samples (or 33%) exceeded the prescribed screening level of 400 cfu/100mL. This segment of the Deep Fork River is not nutrient-threatened. Although the median of the total phosphorus concentrations (0.366 mg/L) exceeded the threshold median of 0.36 mg/L, the station is light-limited with a median inorganic baseflow turbidity of 45 NTU. The nitrate/nitrite median value was below the threshold median of 5.0 mg/L.