

## 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 (11110303). 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 October of 1999 through September of 2004. 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 Oklahoma Water Quality Standards, Appendix A, Table 5 of Oklahoma Administrative Code (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 partially supported. Of the twelve (12) chromium samples collected, two (2) of the concentrations (or 17%) exceeded the prescribed of 50 µg/L (Table 22). The WWAC beneficial use is not supported. Of the 12 lead samples collected, three (3) of the concentrations (or 25%) exceeded the prescribed, hardness-dependant chronic criterion of 11.05 µg/L (Table 22). Of the 12 chromium samples collected, 2 of the concentrations (or 17%) exceeded the prescribed, hardness-dependant chronic criterion of 50 µg/L (Table 22). Of the thirty (30) turbidity samples (Figure 47c), seven (7) samples (or 23%) exceeded the numerical criteria of 50. Dissolved oxygen (Figure 47a) and pH (Figure 47b) samples met the criteria prescribed in the WWAC beneficial use. The AG beneficial use is supported for total dissolved solids, chlorides, and sulfates (Figure 47d and Figure 47e). The PBCR beneficial use is not supported (Table 23). Of the twenty-five (25) enterococci concentrations, nine (9) samples exceeded the prescribed screening level of 406 cfu/mL, and the geometric mean (448.5 cfu/mL) exceeded the prescribed mean standard of 33 cfu/mL. This segment of the Deep Fork 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 (Figure 47f).

**Figure 47a-f.** Dissolved Oxygen (a), pH (b), Turbidity (c), Total Dissolved Solids (d), Minerals (e), and Nutrients (f) on the Deep Fork River at Stroud (AT242500), 1999-2004.



