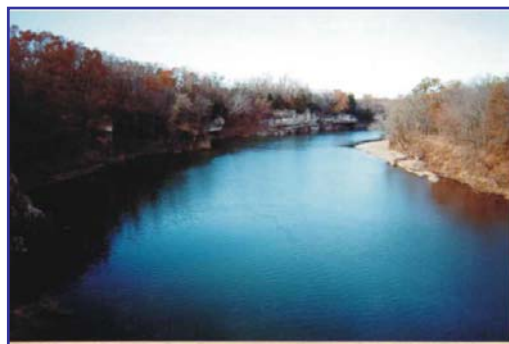


Spring River near Quapaw

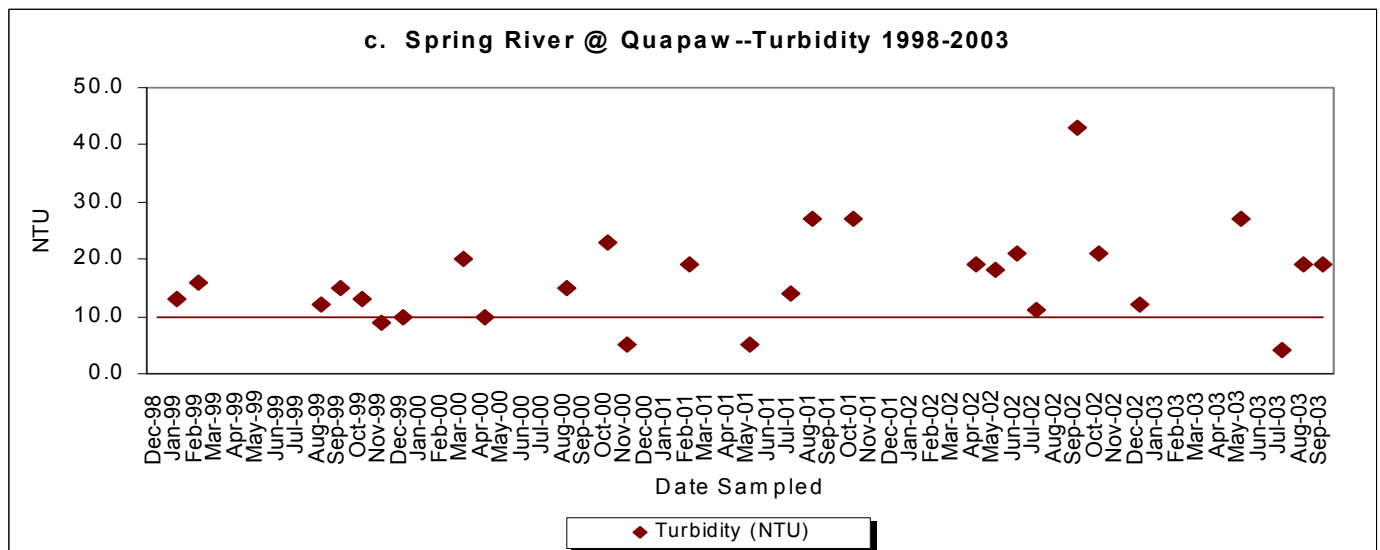
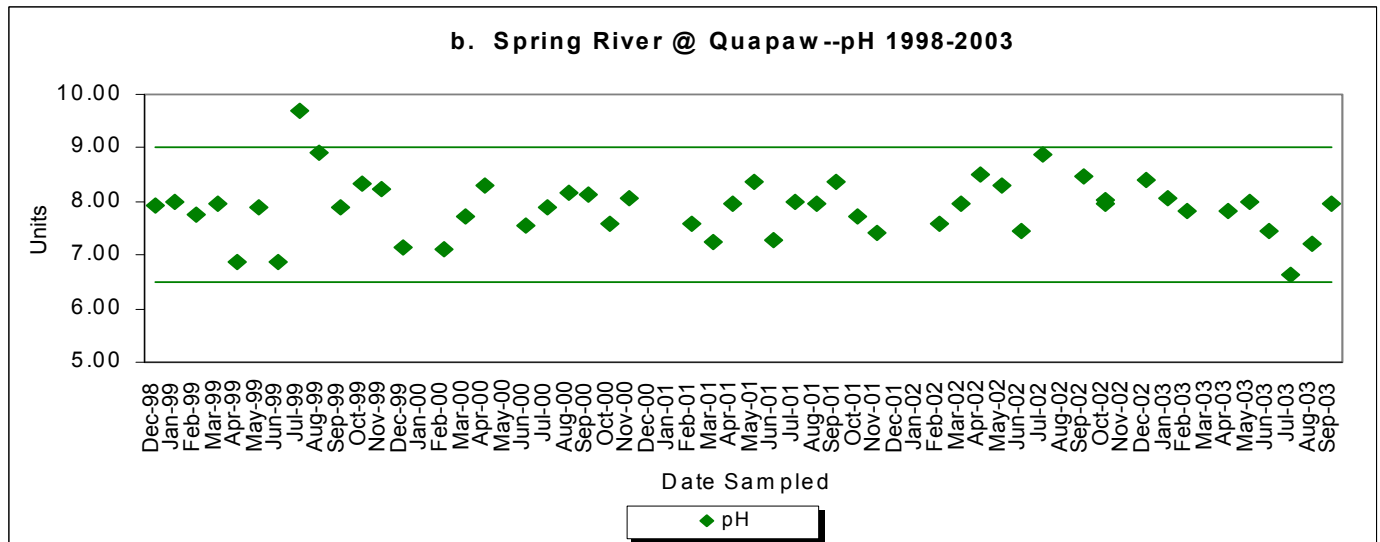
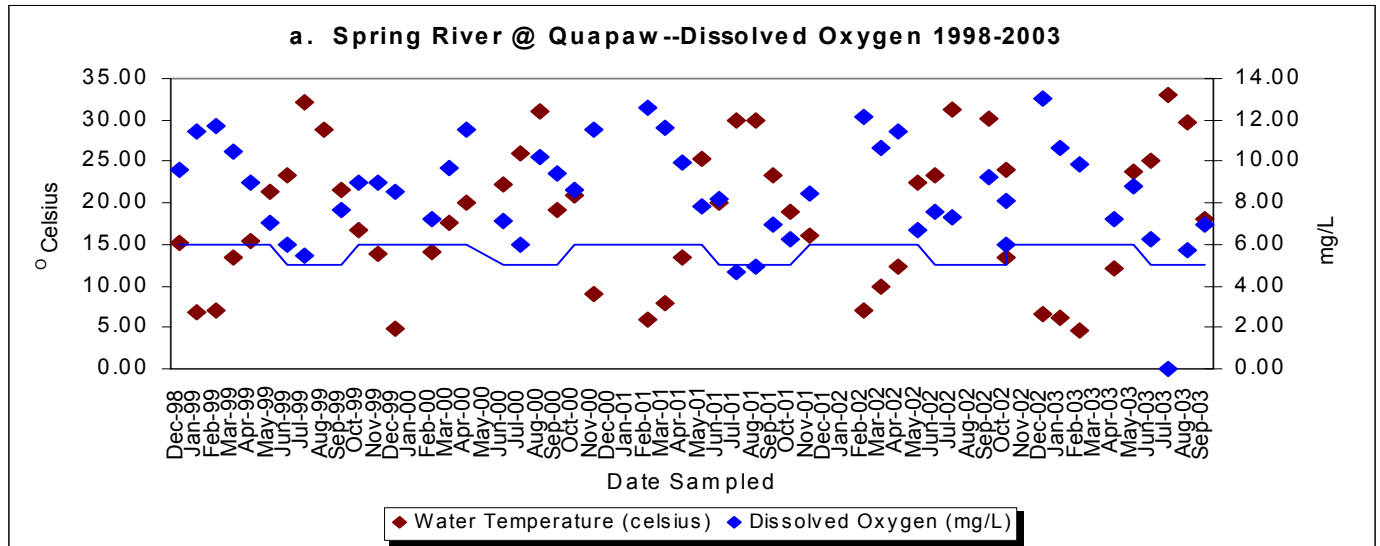
Station AT188000 (121600070010-001AT) is a permanent ambient trend monitoring station located on Spring River in Oklahoma. Situated in the north central portion of Ottawa County, the site was established east-southeast of the City of Quapaw off of State Highway 137 on County Road E0050. The station is positioned near the midpoint of stream segment 121600070010 and is classified within the Spring River 8-digit HUC watershed (11070207). Water enters the stream system from Kansas and from several tributaries including Five Mile Creek, Devil's Hollow Creek, Warren Branch Creek, and Flint Branch Creek, among others.



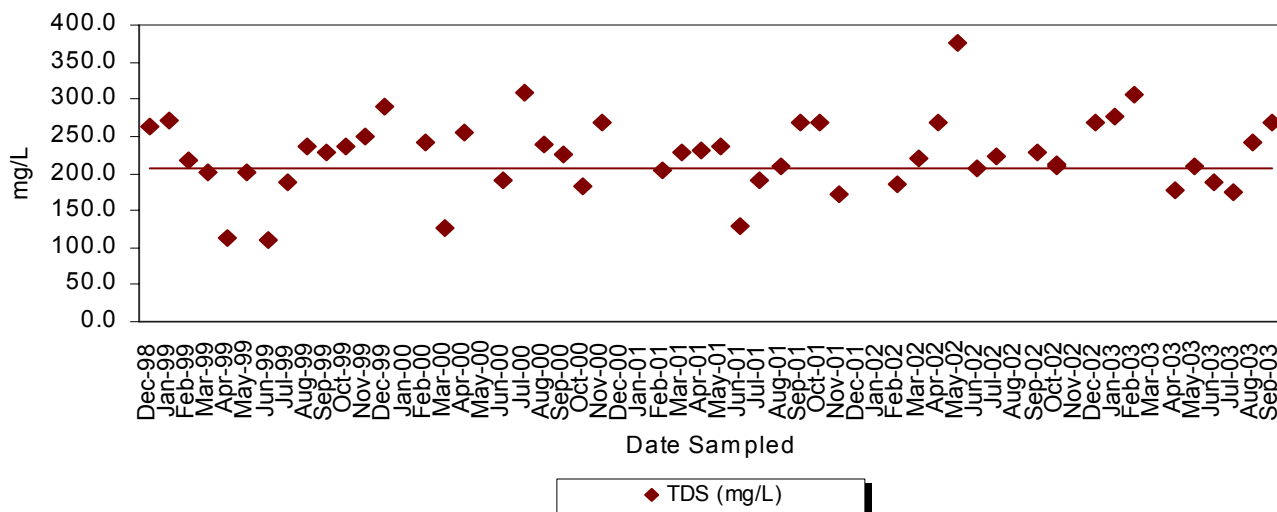
This station on the Spring River has been active for all water quality variables since November of 1998. The following assessment of beneficial uses is based on data collected from December of 1998 through September of 2003. For purposes of reporting, this station is representative of the Spring River from its entrance into Oklahoma (94.7118, 36.9988) downstream to confluence of the Spring River with Grand Lake (94.7342, 36.8322). 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) Cool Water Aquatic Community—Fish and Wildlife Propagation (CWAC), 3) Agriculture—Class I Irrigation (AG), 4) Primary Body Contact—Recreation (PBCR), and 5) Aesthetics.

The PPWS beneficial use is supported. The CWAC beneficial use is not supported. Of the 28 turbidity samples (Figure 31c), 22 samples (or 79%) exceeded the numerical criteria of 10. Of the 13 lead samples; 3 of the concentrations (or 23%) exceeded the prescribed hardness-dependant chronic criterion of 5.32 $\mu\text{g/L}$ (Table 16). Of the 14 zinc samples, 6 of the concentrations (or 43%) exceeded the prescribed hardness-dependant chronic criteria of 149.23 $\mu\text{g/L}$, and 5 of the concentrations (or 36%) exceeded the prescribed hardness-dependant acute criterion of 164.74 $\mu\text{g/L}$ (Table 16). Dissolved oxygen (Figure 31a) and pH (Figure 31b) samples met the criteria prescribed in the CWAC beneficial use. The AG beneficial use is supported for total dissolved solids, chlorides, and sulfates (Figure 31d and Figure 31e). Although 68% of the TDS concentrations exceeded the sample standard of 206.0 mg/L and the geometric mean (229.1 mg/L) exceed the yearly mean standard of 187.0 mg/L, these numbers are still below the prescribed minimum TDS value of 750 mg/L. The PBCR beneficial use is not supported (Table 17). Of the 25 enterococci concentrations, 2 samples exceeded the prescribed screening level of 406 cfu/mL, and the geometric mean (44.7 cfu/mL) exceeded the prescribed mean standard of 33 cfu/mL. This segment of the Spring 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 31f).

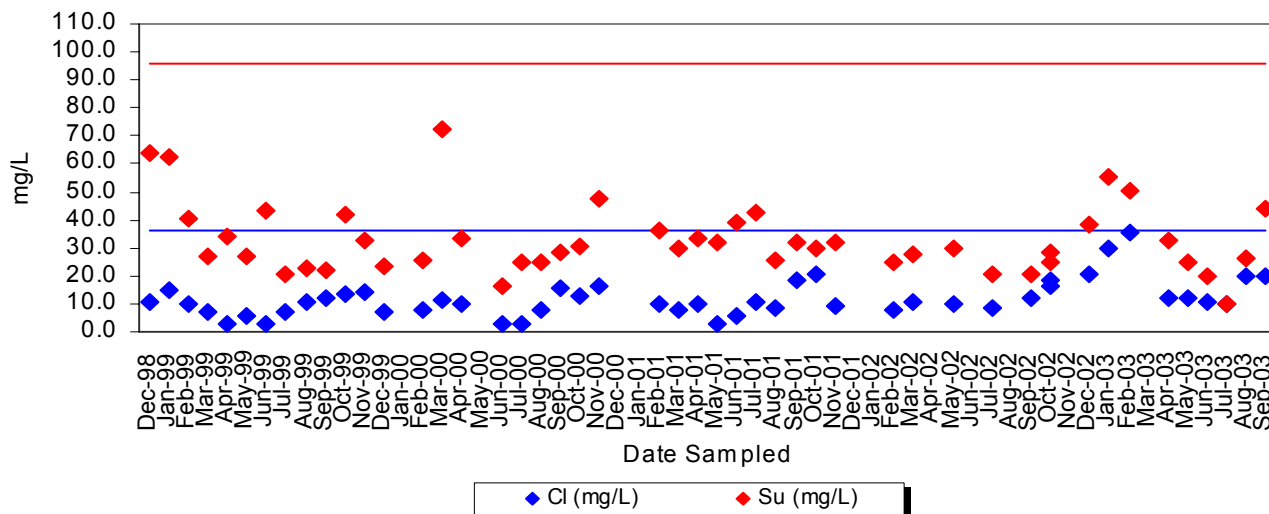
Figure 31a-f. Dissolved Oxygen (a), pH (b), Turbidity (c), Total Dissolved Solids (d), Minerals (e), and Nutrients (f) for Spring River at Quapaw (AT188000), 1998-2003.



d. Spring River @ Quapaw--TDS 1998-2003



e. Spring River @ Quapaw--Minerals 1998-2003



f. Spring River @ Quapaw--Nutrients 1998-2003

