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 May of 2002 through Aprill of 2007. Analysis also includes water quality data collected by the United States Geological Survey's Oklahoma Water Science Center. 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), and 4) Primary Body Contact—Recreation (PBCR).

The PPWS beneficial use is supported. The CWAC beneficial use is not supported. Of the thirty-seven (37) turbidity samples, thirty (30) samples (or 81%) exceeded the numerical criteria of 10. Of the twenty-two (22) zinc samples, nine (9) of the concentrations (or 41%) exceeded the prescribed hardness-dependant chronic criteria of 146.0 ug/L, and seven (7) of the concentrations (or 32%) exceeded the prescribed hardness-dependant acute criterion of 161.14 ug/L. Of the sixteen (16) lead samples, four (4) of the concentrations (or 25%) exceeded the prescribed hardness-dependant chronic criteria of 5.15 ug/L. Dissolved oxygen and pH samples met the criteria prescribed in the CWAC beneficial use. Fish collected during the summer of 2006 indicate that whether the segment is supporting a healthy biological community is currently indeterminate. Based on the Index of Biological Integrity (IBI) outlined in Appendix C of Oklahoma's USAP, the station has a sample composition score of 20 (maximum 30) and fish condition score of 11 (maximum 15) for a total score of 31. This is between the assigned non-supporting and supporting thresholds of 29 to 34 for Central Irregular Plains cool water aquatic communities [OAC 46:15-5(k)]. The AG beneficial use is supported for total dissolved solids, chlorides, and sulfates. The PBCR beneficial use is not supported. Of the twenty-five (25) enterococci concentrations, three (3) samples exceeded the prescribed screening level of 406 cfu/100mL, and the geometric mean (35.6 cfu/100mL) exceeded the prescribed mean standard of 33 cfu/100mL. 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. Furthermore, the mean sestonic chlorophyll-a concentration (8.9 mg/M^3) produced a TSI of 52, which is below the threshold TSI of 62.