

# Lamar City Lake, Site 1



## 2009 DATA

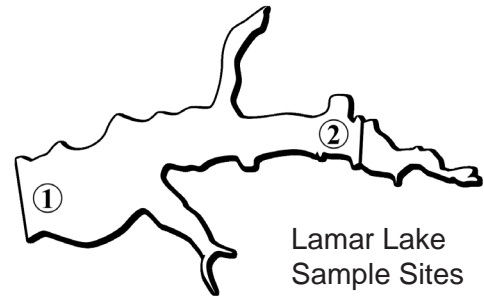
Barton County  
 Latitude: 37.4801 Longitude: -94.2602

| Date            | 4/23 | 5/14 | 6/5  | 6/25 | 7/20 | 8/11 | 8/27 | 9/17 | Mean |
|-----------------|------|------|------|------|------|------|------|------|------|
| Secchi (inches) | 48   | 36   | 30   | 28   | 24   | 18   | 21   | 22   | 27   |
| TP (µg/L)       | 61   | 74   | 84   | 102  | 94   | 123  | 96   | 86   | 88   |
| TN (µg/L)       | 870  | 1000 | 1300 | 1520 | 1560 | 1320 | 1310 | 1130 | 1230 |
| CHL (µg/L)      | 18.2 | 30.0 | 65.7 | 97.2 | 63.8 | 72.9 | 55.2 | 61.5 | 52.2 |
| ISS (mg/L)      | 5.2  | 3.1  | 2.2  | 2.0  | 2.0  | 1.9  | 2.2  | 2.8  | 2.5  |

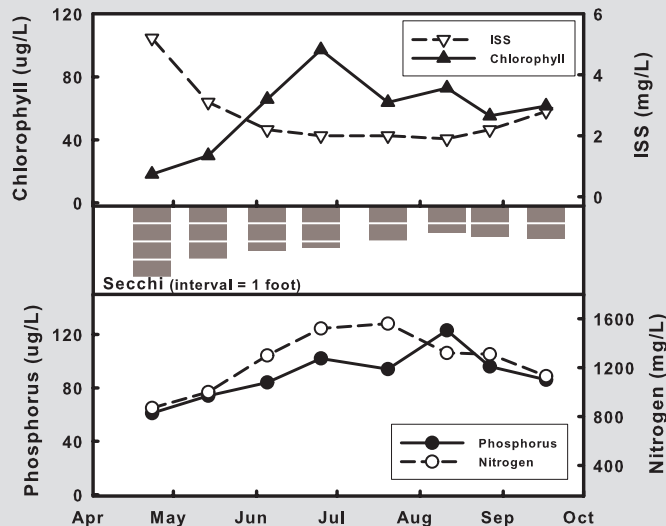
In contrast to many lakes in this report, Lamar City Lake started the season with above average water clarity (4 feet) and became more turbid as the season progressed. The Secchi pattern closely mirrors the pattern of increasing chlorophyll concentrations, which in turn reflects the pattern of increasing phosphorus concentrations through the season. Nitrogen values peaked mid-season. The suspended sediments (ISS) were highest in the spring and decreased throughout the sampling season. The 2009 ISS average at Site 1 was virtually indistinguishable from the statewide ISS average.

The 2009 summer mean chlorophyll concentration also exceeded the long-term mean and was nearly double the nutrient criteria value (graph not shown). Suspended sediments (ISS) varied little in 2009 and were, on average, typical of this site. 2008 ISS values, in contrast, were quite high and varied considerably.

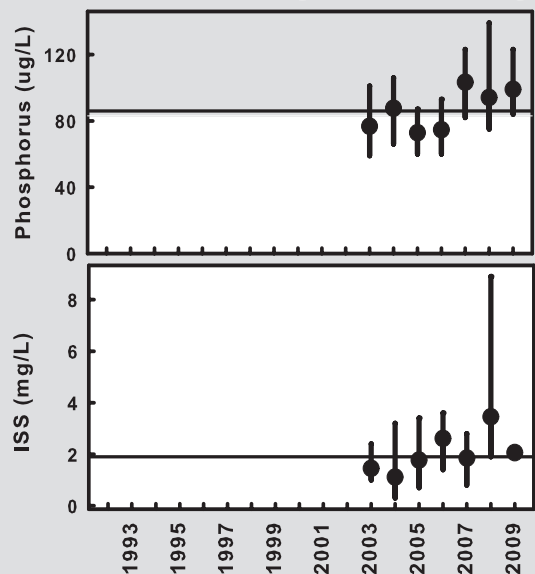
Lamar City Lake's long-term phosphorus value exceeds the state nutrient criteria value, and for the third consecutive year the seasonal average exceeds the long-term mean.



## 2009 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs

# Lamar City Lake



# Site 2

## 2009 DATA

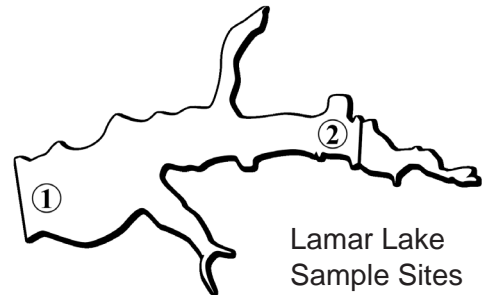
Barton County  
Latitude: 37.483 Longitude: -94.2451

| Date            | 4/23 | 5/14 | 6/5  | 6/25  | 7/20  | 8/11 | 8/27 | 9/17 | Mean |
|-----------------|------|------|------|-------|-------|------|------|------|------|
| Secchi (inches) | 42   | 24   | 30   | 26    | 18    | 16   | 22   | 21   | 24   |
| TP (µg/L)       | 75   | 223  | 86   | 175   | 144   |      | 104  | 78   | 117  |
| TN (µg/L)       | 890  | 1750 | 1290 | 1950  | 1750  |      | 1270 | 890  | 1340 |
| CHL (µg/L)      | 16.9 | 15.5 | 70.5 | 158.1 | 100.0 | 63.3 | 63.7 | 44.6 | 51.9 |
| ISS (mg/L)      | 6.7  | 25.0 | 1.5  | 1.7   | 6.3   | 1.4  | 1.7  | 2.5  | 3.4  |

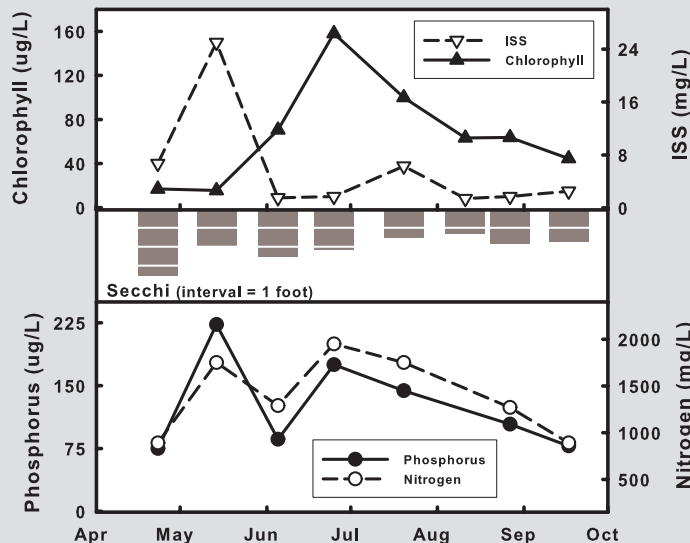
Suspended sediment concentrations were slightly higher at Site 2 than at the dam, mainly due to the May 14 and July 20 peaks. Measurements from the remaining sample dates were nearly identical to (if not slightly lower than) the dam site. Water clarity at Site 2 differed from the dam site by only 3 inches on average. Secchi values only differed significantly from the dam on the dates with the suspended sediment peaks. Nitrogen and chlorophyll concentrations at Site 2 were, on average, virtually indistinguishable from those of the dam site. Phosphorus concentrations were 33% higher at Site 2 than at the dam, with the highest value occurring on the same date as the suspended sediment peak.

To account for much year-to-year variation in spring rainfall and temperature fluctuations, trend graphs in this document show only “summer” sample dates between May 15 and Sep-

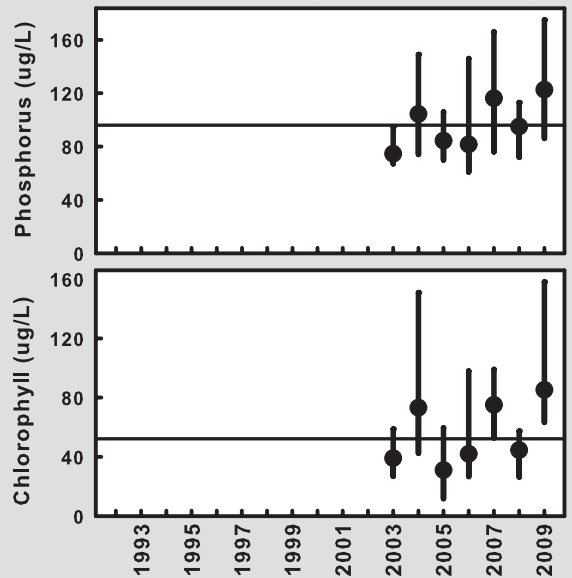
tember 15. The 2009 mean summer phosphorus concentration was well above the long-term mean and roughly 25% higher than at the dam. The difference between sites is typically closer to 10%. Had the exceptionally high May 14 sample not been excluded from this graph the phosphorus range would extend an additional 30% higher. Summer chlorophyll values were high in 2009, with the entire range exceeding the long-term mean.



## 2009 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs