



2020 Secchi Day on Beaver Lake - Water Quality Results

For the 15th annual Secchi day, a record-low 19 teams covered 35 sample sites throughout Beaver Lake. Because of COVID-related precautions, all sampling teams were experienced, returning teams. Sampling teams take Secchi disk readings to determine water clarity and collect water samples which are tested for Chlorophyll-*a*, Total Phosphorus, and Total Nitrogen, to determine algal density and nutrient concentration. Secchi depth in late August is inversely related to the concentration of Chlorophyll-*a*. Therefore, as Chlorophyll-*a* decreases, Secchi depth increases. When it comes to producing drinking water, higher Secchi depths and lower Chlorophyll-*a* concentrations are best. Below is a summary of results.

- **Secchi Depth:** The maximum depth at which a Secchi disk can be viewed from the surface of the water.
 - Average Secchi depth for Beaver Lake was 2.9 meters or 9.51 feet.
 - Minimum depth was 0.87 meters (2.85 ft) near White River and Richland Creek confluence.
 - Maximum depth was 6.9 meters (22.6 ft) near Lost Bridge Village.
 - Average Secchi depth for 2020 was slightly greater than the 15-year Long Term Average (LTA) of 2.7 meters (8.85 ft).
- **Chlorophyll-*a* (Chl-*a*):** A pigment in algae that is used to measure the density of the algal population of a lake.
 - Average Chl-*a* concentration for Beaver Lake was 6.25 µg/L.
 - Minimum Chl-*a* concentration was 1.02 µg/L at the Beaver Lake dam.
 - Maximum Chl-*a* concentration was 18.94 µg/L near the HWY 412 bridge.
 - Near surface mean concentration for Chl-*a* was lesser in 2020 than the 15-year LTA of 7.51 µg/L.
- **Total Phosphorus (TP):** A nutrient that promotes algal growth. Phosphates come from a variety of sources including agricultural and urban runoff, sewage treatment plant effluent, and faulty septic systems.
 - Average TP concentration for Beaver Lake was 8 µg/L.
 - Minimum TP concentration was 0.0 µg/L at the Beaver Lake dam.
 - Maximum TP concentration was 41 µg/L at the upstream end of War Eagle Creek.
 - Near surface mean concentration of TP was lesser in 2020 than the 15-year LTA of 15 µg/L.
- **Total Nitrogen (TN):** A nutrient that promotes algal growth. Nitrogen also comes from a variety of sources including fertilizer runoff, faulty septic systems, municipal wastewater and animal wastes, erosion of natural deposits, as well as atmospheric N-fixation in water.
 - Average TN concentration for Beaver Lake was 240 µg/L.
 - Minimum TN concentration was 80 µg/L in the Blackburn Arm.
 - Maximum TN concentration was 430 µg/L near Lost Bridge Village.
 - Near surface mean concentration of TN was lesser than in 2019.