Lake George Inlet Streams Water Quality Testing-2022 Results

Supported by LGC

The Steuben County Lakes Council (SCLC) has been conducting water testing of inlet streams for many of the recreational lakes in Steuben County including Lake George for many years. They conduct the water testing three times each year over the spring and summer timeframe. The long-term testing site that SCLC has been using for Lake George is the inlet stream that passes through a pipe under Kope Kon Road (site #38). From 2017 through 2020, the LGC funded the SCLC to also take samples at the outlet stream from Silver Lake at Old Hwy 27 known as Site #67. We dropped this site for 2021 and 2022 because the results for the previous three consecutive years of testing showed no indicators of concern. In 2017 the LGC also began paying the SCLC the full cost of sampling an additional site at a pipe outlet under Flint Road near the boat ramp (site #72) and continue to do so in 2022. Sampling is done at each site three times per year (May, July and August) at a current cost of $154.00 per sample or $462.00 for all three sample months. Water flow through the outlet pipe at Site #72 is intermittent depending on the size of rainfall events just prior to the sampling date. Therefore, this site can only be sampled when water is flowing through the pipe on the day of their scheduled sampling.

The table below shows the 2022 results for samples taken at the two Lake George tributary sites mentioned above (sites #38 & 72) as well as the results SCLC reports for sampling site #39 located on Crooked Creek below the Lake George Dam before the creek empties into Snow Lake. We included the results for site #39 to show how clean the stream water is in the outlet creek that flows from the dam below Lake George.

The table also lists the IDEM recommended maximum levels for head water streams for each of the parameters shown below.

	E. coli	Total Phosphorus	Suspended Sediments
Recommended Max Level	**235 (colonies/100ml**	**.076 mg/l =.076 PPM**	**30 mg/l =30 PPM**
Sample Site & Dates Sampled:			
#38 (Kope Kon Road Site)			
05/19/22	**41.0**	**0.017**	**1.2**
07/22/22	**1046.2**	0.014	**2.4**
08/02/22	**547.5**	**0.023**	**2.6**
#72 (Flint Road Site near the Boat Ramp)			
05/19/22	**88.4**	**0.072**	**0.18**
07/22/22	**8664.5***	**0.121**	**31.0**
08/02/22	**2423.3***	**0.050**	**8.8**
#39 (Crooked Creek Below Lake George Dam)			
05/19/22	**8.5**	**0.016**	**1.2**
07/22/22	**45.7**	**0.012**	**0.02.**
08/02/22	**9.7**	**0.014**	**1.2**

*** SCLC Report state that the 07/22/22 & 08/02/22 E. coli samples data for Site #72 is suspect.**

Notes on the Results:

The majority of the 2022 testing results for the three sampling locations reported numbers well below the recommended maximum levels. Only six testing numbers (highlighted in red) were above the IDEM recommended levels. Four of those six numbers were for E. coli and two of those were highly suspect numbers as noted in the footnote at the bottom of the table. It is very important to note that the SCLC's results reports for the samples taken at site #72 on 07/22/2022 and 08/02/2022 for E. coli state that "the data is suspect, laboratory analysis was performed outside of hold time". The number reported for the July sample in particular was higher than nearly all the numbers shown in SCLC's reporting for all 76 sites throughout the county for the last several years. This and the fact the lab test was done outside the hold time for analysis does make the accuracy of these numbers indeed very suspect, The other two E.coli numbers above recommended levels were collected at site #38 on 07/22/22 and on 08/02/22. These numbers, while not desirable, are consistent with the trend we've seen for E.coli at the site for the last several years. The other two number above the recommended levels were for total phosphorus and suspended solids at site #72 on 07/22/22. These numbers are just slightly above recommended levels.

In our continued effort to try to determine the main culprit causing the E. coli readings that are above recommended levels, we cooperated again for the third year in a row with the SCLC to experiment with using DNA testing to identify the specific source(s) of E. coli found in water samples. In 2022 we contributed $300 (50% of the cost) to run DNA testing on water samples taken from Lake George's current sampling sites #38 and #72 as well as at Site #67 located at the bridge on Angola Road over the outlet stream from Silver Lake. The DNA samples at all three sites were taken on July 6, 2022. On that day, the E. coli readings were 524 colonies/100ml at site #38 (Kope Kon Rd), 182 at site # 67 (Angola Rd), and 664 at site #72 (Flint Rd). The only reading below the maximum recommended level of 235 colonies/100ml was at site # 67 (Angola Rd). Human waste was identified as the primary source of the E. coli at each of these sites. Please note that the IDEM recommended maximum level of 235 colonies/100 ml is for full body contact with water (i.e. swimming). DNA test results at these sites in previous years have shown poultry and dogs as additional sources of E. coli. The previous poultry reading was most likely geese and other wildlife fowl. DNA testing to determine E. coli sources in water samples is still a work in progress. Professor Emeritus Pete Hippensteel who serves as the Water Quality Advisor for the SCLC, and Bill Schmidt, who chairs the SCLC's Water Quality Committee, are leading the DNA testing initiative and are working with Biomonitor, Inc. out of Indianapolis. They will continue to work on improving both the understanding and accuracy of this technique for determining E. coli sources. Knowing the source(s) of E. coli is vitally important to determining if, and how it can be reduced.

To view the 2022 water testing results for all 76 county wide sites sampled by the Steuben County Lakes Council go to their website at www.lakescouncil.org and click on 2022 Water Testing Results for May, July, and August.