



**Project: *Canandaigua Lake Foam***

**Reference table for acronyms**

Analyses/Data Types		Description
<b>C/N</b>	Carbon to Nitrogen Ratio	The relative amount of carbon to nitrogen in natural materials varies depending on their composition. Land plants typically have higher C/N ratios than aquatic primary producers like phytoplankton. Molecules like proteins typically have low C/N because they are made of amino acids which contain N. Carbohydrates and lipids have high C/N as they lack N in their structures.
<b><math>\delta^{13}\text{C}</math></b>	Stable Carbon isotope ratio (delta 13 C)	At the atomic level, elements can have different weights (isotopes), including Carbon. $\delta^{13}\text{C}$ is calculated from the ratio of Carbon atoms in a sample with a weight of 13 (rarer isotope) vs. a weight of 12 (more common isotope), and more negative values indicate relatively more Carbon-12 is present. Biological processes tend to select for C-12 rather than C-13, so photosynthesizing organisms (plants, phytoplankton) make organic molecules with relatively lighter (more negative) Carbon than inorganic compounds like $\text{CO}_2$ and minerals in rocks. Due to differences in photosynthetic processes, various groups of plants can be distinguished by their carbon isotope ratios, making it possible to differentiate inputs of trees vs. grasses vs. aquatic plants to waters and sediments. For example, C4 grasses like corn may have values of -14‰, while deciduous trees and soils may have values of -28‰.
<b>DOC</b>	Dissolved organic Carbon	Operationally defined as the organic carbon in an aqueous sample that can pass through a 0.7-micrometer filter. In other words, it is the concentration of C derived from organic material that is dissolved in the water.
<b>FAs</b>	Fatty Acids	Compounds produced by organisms to store energy and build cell membranes. The distribution of fatty acids (differences in carbon chain length and # of double bonds) in a sample gives specific information about their biological source.

<b>FTIR</b>	Fourier-Transform Infrared spectroscopy	Technique used to measure the absorption/emission of infrared radiation of a sample. This can be used to image molecules and determine the types of bonds present allowing for the identification of proteins, lipids, carbohydrates and other compounds.
<b>POC</b>	Particulate organic carbon	Amount of organic carbon contained in particles (>0.7-micrometers) suspended in the water column. This includes both living and dead cells as well as compounds made by bacteria, plants, animals and fungi.
<b>TDN</b>	Total dissolved Nitrogen	The amount of N in an aqueous sample after passing through a 0.7-micrometer filter. Includes both organic nitrogen and inorganic nitrogen (nutrients).
<b>TLE</b>	Total lipid extract	The total weight of lipids (all fats) extracted from a biological or water sample. An individual type of lipid such as fatty acids only makes up part of the lipid pool.
<b>TSS</b>	Total suspended solids	The total weight of all particulates (particles >0.7-micrometers) per unit volume suspended in the water column. Includes both organic and inorganic particles, and is an indicator of water clarity.