



Doing our Part.... Flares and Fireworks

July 3rd – Fireworks and Flares

Part of the Conesus Stewardship Initiative is to look at long standing traditions and practices and determine what impact they have on the lake. The “Lake of Fire” has been around since at least 1930 and brings tremendous benefit and joy to our residents, businesses and visitors; but what about the lake?

Fireworks: The biggest concern some may have about fireworks is that they contain a harmful chemical perchlorate. The only definitive study on the impact of fireworks on water quality was done by the Lake George Association in 2010 (1). After studying water samples and sediment samples at locations that run weekly shows throughout the summer (and control sites), they found no evidence of increased perchlorate (or antimony or barium) in either the water or sediment and all levels were significantly below federal standards. This is not to say that fireworks do not contribute a lot of trash in the lake on these days. Please make every effort to keep any fireworks trash out of the lake and clean up any trash from the lake as soon as possible.

Please Note: Personal use and possession of fireworks (with the exception of “sparklers” used by those over 18) have been banned in New York since 1940 due to a concern for safety. (In 2019, 7300 people required emergency room treatment for firework injuries, including 2600 kids under 15 (2)). Possession of more than \$50 worth can result in a \$500 fine. Please leave fireworks to the professionals. (1) An Initial Study into the Effects of Fireworks on the Water Quality of Lake George – Lake George Association 2010, (2) US Consumer Product Safety 2020

Flares: As with fireworks, there is no scientific evidence that flares (properly used and disposed of) have any impact on water quality. A recent DOD funded study (3) indicates the intensity of the heat and the complete burn consume virtually all traces of perchlorate (99.97%). Their study also suggests that the total remaining perchlorate in residue from all flares burned on the 3rd would be approximately 27 grams (about the same weight as 8 sugar packets). Should all of that residue be dumped into the lake (please don’t!) it would result in an untraceable amount of .000164 micrograms/liter. That is not the case with an unburned flare, so any flares dropped in the water must be retrieved immediately. Additionally, all remnants (flare slag, spike, striking caps) must be kept out of the water and disposed of properly. You might consider spiking your flares through a small aluminum tart pan to ease clean up. **Please Note:** Flares should only be handled by responsible adults due to the intense heat they generate. Please do not look directly at flares and avoid breathing smoke from nearby flares. (3) Evaluation of Alternative Causes of Widespread, Low Concentration Perchlorate Impacts to Groundwater - SERDP Project ER-1429 2008

A final note: Although fireworks and flares have been shown to not impact water quality, the transient effect of noise and smoke are real. These seem to be effects that most residents accept and often enjoy. The County Health Department does provide the following caution: “Any burning (fires, flares, or fireworks) can cause breathing problems or trigger asthma attacks. If smoke is found to be irritating, please go inside or leave the area and seek attention if the condition persists.”

Evolving alternatives to flares: Recent articles regarding the evolving technology of LED flares has piqued some interest as to whether these are a better alternative to flares. Studies indicate that although this new technology is a “viable alternative”, it has its shortcomings as well, especially in areas of visibility, cost and the carbon footprint inherent in ultimately disposable, plastic, battery powered products. A study by the Department of Justice (4) concludes that despite a number of disadvantages “highway flares continue to be viewed as one of the most cost-efficient options for first responders. They can be quickly deployed and are visible at great distances and under adverse conditions”. The study pointed out that even the best LEDs were visible at only 1/4 to 1/2 the distance of flares. The best lithium powered devices only approach parity if placed on 3ft tall cones. Another area of concern is these products would require about 24,000 AA batteries to power our Lake of Fire. The CLA will continue to evaluate this evolving technology and would encourage you to make your own decision. For now, the CLA believes that traditional flares are the best option to distribute to our members for the Lake of Fire.

(4) Department of Justice, Evaluation of Chemical and Electric Flares, 2008

A somewhat difficult topic for “best practices” but if we all “do our part” and comply with the above recommendations; we should be able to protect our lake and continue to enjoy this long-standing tradition safely for years to come.