**AYC Ecology**

**By Ed Payne**

**Toledo Water Emergency August 2 - 4, 2014**

Beginning on August 2, 2014, there was a water emergency in the Toledo Water Department supplied area.

Some facts about this:

1. The Blue-Green Algae blooms in Lake Erie are not a new phenomenon.
2. The microsystins within the algal blooms are extremely hazardous, and even deadly, to living organisms.
3. The tests used to determine the microsystin levels were 4 in number: Lake Superior University, the Ohio EPA, the United States EPA, and the City of Toledo, each had a test, but each was different from the other.
4. Through all-involved conference during this emergency, one test was settled on as the benchmark. This test will be used going forward.

**MY BELIEF** on this subject is that it is not being totally addressed so as not to be repeated. Even in comments by those officials of the City of Toledo, to include the Mayor, the chairs of the Health Department, the Water Department, and even the State of Ohio was represented by the Governor, it was stated that they had EXPECTED a severe outbreak to occur in late September, and were surprised at this earlier bloom.

Continuing with MY BELIEF:

1. EVERYONE involved has been aware of this algal bloom effect on humans for, at the very least, the last 3 years.
2. Though there have been some remedial efforts attempted, none were funded, nor proved efffective.
3. The City of Toledo Water Department announced during Press questioning, that they have been treating blooms with charcoal, but the question remains as to the effectivness of this treatment, as there have been no scientific reports, at least that I have seen, where this was a proven treatment.

On the AYC website (<http://www.associatedyachtclubs.com>) “Committee Reports” page, you can go back as far as 2011 and find reports on this subject. Interestingly, 2011 is the year cited during news reports when this came to the attention of the elected-officials.

In an earlier email, I cited these sites for your further education on this topic:

**Conservation Technology Information Center**: <http://www.ctic.org/WCCA/Proceedings> There is much info on this site, but you will need to search through to find all applicable to our area.

**Lake Erie Waterkeepers**: <http://www.lakeeriewaterkeeper.org/welcome/> Again, much info but you will need to seek what you need.

Toledo Mayor Michael Collins was very appreciative in his acknowledgements to the citizens affected, and all those who worked so hard toward resolution of this issue.

One thing he did say that was very important is that he called upon everyone of the elected officials, from the City of Toledo, the State of Ohio, and the Government of the United States, to put aside the partisan politics, stop the bickering and backfighting, and come together to do what they were elected to do: solve problems!

Moving forward, there will be much grass roots efforts needed to assist local and state officials on this front, as well as so many others, to push for absolute remediation.

There are many efforts that have been ongoing to address this, all with minimal funding, and most by volunteer groups. No one who has real authority to DIRECT change has been involved, so all changes are only based on individuals cooperation.

There have been many efforts that assist in remediation of algal blooms:

1. Scott’s Fertilizer has formulated a fertilizer that does not include phosphorus.
2. Farm equipment manufacturers have partnered with GPS technology services to create new machinery that will actually work an entire field based on GPS information, so as to allow a farmer to plow, plant, and fertilize, within guidelines formulated through the proper research.
3. CAFO’s, (**C**orporate **A**nima**l Farming O**perations), have been identified and tasked with ceasing their manure escapement into water tributaries.
4. Tests have been, and continue to be, developed to identify what is safe, and what is unsafe. These remain area-oriented though, so all must be wary while on the lake.

Relative to boating: There is no definition as to how the algae-infested water you intake for engine cooling, or that leaks into your bilge, especially the remains of algae that sits inside your bilge as the water gets heated from engine heat and evaporates.

In the last example: What about inhalation of these toxins? Do they carry through the air as heat is applied at the water evaporates?

If that is true, what about the water brought in to the nuclear power plants for cooling, and the steam discharged? What does that steam carry into the atmosphere?

There remain many questions. There are not so many answers. At least, not answers that are truly scientific based.

The only answer ongoing today, is to be vigilant.

Are we to turn on the news now, before we make coffee, brush our teeth, take a shower? Seems to be the best step we can take today, especially with the recognition that more severe blooms have already been predicted for September.

This will NOT be the last algal bloom that will shutdown water supplies!