



## **WSCAC Meeting**

March 10, 2015-10:00 AM

Location: John J. Carroll Water Treatment Plant in Marlborough

### Members in Bold in Attendance:

**Whitney Beals, WSCAC Chair, NE Forestry**  
**Elie Saroufim, Boston Water & Sewer**  
Martha Morgan, Nashua River Watershed  
**Dona Motts, MA League of Women Voters**  
**Kurt Tramosch, Wayland Wells**  
**Terry Connolly, Town of Ware & Trout Unlimited**

Andrea Donlon, CRWC  
**Gerald Eves, Trout Unlimited**  
**Michael Baram, BU & CLF**  
Paul Lauenstein, NepRWA  
Martin Pillsbury, MAPC  
**Bill Fadden, OARS**

### Non –Members in Attendance:

Lexi Dewey, WSCAC staff  
Guy Foss, MWRA  
Sean Navin, MWRA

Andreae Downs, WAC  
Betsy Reilley, MWRA

### WSCAC Business

Whitney Beals called the meeting to order and members and non-members identified themselves. Whit entertained a motion to approve the February meeting summary as distributed and amended by Travis Ahern and Stephen Estes-Smargiassi; the meeting summary was unanimously approved.

Lexi Dewey provided the committee with several updates. She mentioned that WSCAC's comments on the Brice-Lemon NPR were cited in an article by *The Landmark* and the development of the subdivision is currently on hold. She stated that Martha Morgan sent the WSCAC office information from the Nashua River Watershed regarding the proper disposal of medications; Lexi circulated a list of disposal sites. Finally, she said that Bill Fadden had emailed the office inquiring about snowpack information in the reservoirs. Although Steve could not attend this meeting, he sent information to Bill and the office about the snowpack they are tracking weekly; Lexi told the committee she would circulate it.

Elie Saroufim made an announcement about Boston Water and Sewer Commission's "We're All Connected" Program. He stated BWSC is starting to move into the wastewater and potable water version; he mentioned water conservation and preservation as topics of interest related to WSCAC. Elie asked that Lexi and members continue to send information related to such topics and he would incorporate them into the project.

### Algae in the Quabbin and Wachusett Reservoirs-Betsy Reilley, Director of Environmental Quality

Betsy Reilley introduced herself and stated that she would provide information about the MWRA's algae monitoring and control program. In addition, Betsy stated she would cover ozone treatment and issues surrounding harmful algae blooms.

Betsy began by posing the general question of why worry about algae? Although not all algae are harmful, some algae can be problematic in respect to the taste and odor of water (MIB and geosmin). Toxic compounds also

lead to recreational water use issues, she stated. The MWRA however, has mostly confronted taste and odor complaints in the context of algae. Betsy displayed a graph of monthly taste and odor complaints; she stated that fifty complaints a month is baseline and anything beyond that is cause for concern.

Kurt Tramosch questioned how the complaints are logged. Betsy replied that they take a systematic approach. They call all of the community water systems, such as local DPWs and water departments, and ask if they have received any complaints. The MWRA has worked with the communities to train them about what sort of information they need. For instance, the address of the complainant, how many complaints, and whether the complaint is in regards to the hot or cold water.

Betsy was asked if MWRA deals with algae throughout the entire water system, or just in the reservoirs. Betsy said the graph of taste and odor complaints is primarily about the Wachusett Reservoir. There are algae at the Quabbin Reservoir but no complaints of taste or odor as the algae occurs at such a low level. She continued to state that algae do not thrive in the pipes of the distribution system as there is insufficient light.

Kurt then referenced the online MWRA Algae Fact Sheet. He said the fact sheet discusses *Synura*, an algae that grows well at low temperatures and low light. Kurt questioned if this algae type had an impact on taste and odor in the 1990s. Betsy said they did experience a *Synura* bloom under ice in 1988 and treated it with copper sulfate.

Betsy continued to discuss nuisance algae. Taste and odor compounds released from algae cells are released when the algae is growing, as well as when it is dying. Therefore, the primary goal is to prevent growth. Prevention was the crux of the program the MWRA developed in the 1997-1998 period.

Bill Fadden asked if the MWRA samples for taste and odor at the source. Betsy said no, they do not sample for the compounds as those methods are still developing. They do conduct odor analyses.

Betsy then addressed improvements the MWRA has made in terms of monitoring algae. For instance, they bought a FlowCAM: a microscope with a camera and software program. The FlowCAM enables good data to be collected with relative ease. With respect to improvements in treatment, the MWRA purchased a new treatment boat and developed a new way to disperse copper sulfate at deep depths. Additionally, they employ a GPS so they can consistently follow a treatment track.

Kurt questioned if the unusual snow banks and the pollutants in the snow led to any changes this season in respect to algae control. Betsy responded that they have not looked at their data from that perspective before, but they do look at it in terms of ice cover. Although they have observed connections between seasonal blooms in past years, Betsy said those connections have not necessarily held up over the years. There are still aspects of algae that they do not fully understand.

Betsy informed the committee about the MWRA's use of a Turner Design C-FINS™ Fluorometric Integrated Nautical Mapping System. The towable sonde can provide data about algae in the reservoirs, as well as petroleum products in the event of a spill. With probe attachments, the device is able to collect data continuously and track it. As they are currently limited in terms of monitoring algae, the device is a significant step forward.

Betsy then discussed ozone treatment and the John J. Carroll Water Treatment Plant. Betsy stated that within ten years of operation, they have observed elevated algae levels but have not documented any taste/odor complaints after treatment. As a result, they are considering the possibility of tolerating more algae growth and reducing the number of copper treatments; if the ozone treatment is sufficient, it could be beneficial to minimize copper applications as it is toxic to fish and aquatic life.

Betsy spoke about the EPA's National Pollutant Discharge Elimination System program (NPDES). Under this program, the EPA requires the MWRA, and other agencies that distribute pesticides, to file an annual report

under their Pesticide General Permit. In respect to the law, copper sulfate is considered a pesticide. The MWRA is also required to file any changes to their program to the EPA.

Kurt questioned if the MWRA has ever seen a fish killed as the result of a copper sulfate application. Guy Foss responded that yes, he has; however, he did not observe it within a drinking supply. One year, when the MWRA treated Reservoir One it was extremely shallow and DO levels were low; they applied a copper sulfate treatment. Guy said about a truckload of fish were killed. At the time it was uncertain whether the copper sulfate treatment killed the fish or if the fish suffocated from all of the algae in their gills.

Betsy returned to her discussion of ozone treatment. She informed the committee that the MWRA is conducting a study with UMASS Amherst to identify some of the taste and odor compounds that are coming from different types of algae in the Wachusett Reservoir. The results of the study will be used in succession with algae monitoring to develop more effective algae management policies.

Kurt then referenced a November 23, 2014 memo from Fred Laskey regarding an algae bloom at the Chestnut Hill Reservoir. The bloom was a result of an annual drawdown. Kurt asked if blue-green was a problem in 2010 when Chestnut Hill was used as a backup water supply. Betsy said that immediately before activating the reservoir, they conducted sampling; she does not recall that the algae were a problem at that time. Currently, however, there are attached algae mats growing in Chestnut Hill and they are working to eliminate them.

Betsy then addressed Harmful Algal Blooms (HAB) in the news. Betsy discussed the issuance of 'Do Not Drink' orders as well as the criteria for advisory warnings against water contact in respect to recreation. She then reviewed actual comments about MWRA water: After the Carroll Water Treatment Plant went online, consumers cited a marked taste improvement and a complete lack of odor. Betsy also told the committee about a taste test done between MWRA water and bottled water; the only difference found between the two was the higher cost of bottled water. Finally, Betsy discussed MWRA's "Best Tasting Water" award from the 2014 AWWA ACE14 Conference.

Betsy concluded her presentation by paying credit to the vast number of people who work on algae monitoring and control: the Western Operations Staff, the DCR Staff in West Boylston, the EnQual water staff, summer interns, and students and faculty at UMASS Amherst. She then opened the floor to questions from the committee.

Whit questioned if Betsy expects nitrogen to be an issue as a result of the snowpack this season. Betsy said she had not heard of such an issue, but would watch for it moving forward.

Kurt asked if Betsy is expecting a chloride flush following the snow melt. Betsy replied that for the most part, DCR handles watershed related issues. She does, however, plan to speak with DCR in order to find out what she should be concerned about this year.

Kurt then asked aside from algae control, what concerns does Betsy have in terms of water quality? Betsy replied that when she first started at MWRA, she faced lots of complaints and dealt with issues related to chloroform, algae, water discoloration, and treatment processes. Betsy said the MWRA has made so many improvements on the drinking water side. She said currently, the biggest issue is security related monitoring for the system.

Kurt further prompted Betsy by asking if treatment byproducts continue to be an issue. Betsy replied that no, they are not. Kurt questioned if Betsy had observed emerging contaminants, such as manganese. Betsy responded that no, manganese and pharmaceuticals are both non-issues. Betsy said surprisingly, they have detected very low levels of strontium. Strontium is a natural mineral and as Betsy has observed it throughout all of the monitoring locations at the same low level, she informed the committee that it is just a natural characteristic of the water (strontium levels detected in samples are 500-1000 times lower than the acute

health advisory). Strontium was detected as part of a required EPA program, the Unregulated Contaminant Monitoring Rule 3 (UCMR3). In this program, 21 contaminants are tested. Only four substances were present above the required very sensitive detection limits in fully supplied communities: total chromium, hexavalent chromium, strontium, and chlorate.

Bill asked if there was ever a mercury problem in the reservoirs. Guy Foss responded just in Framingham related to the Nyanza site.

Whit asked if the MWRA ever samples fish from the reservoir. Betsy replied that fish sampling is not done on a regular basis, but special projects may have been conducted.

The committee thanked Betsy for her presentation. The meeting was adjourned.

Guy Foss invited interested members upstairs to see the control room at the Carroll Water Treatment Plant.