



February 28, 2013

Pembroke Watershed Association  
c/o Mr. Ray Holman, President  
P.O. Box 368  
Pembroke, MA 02359

**Re: 2013 Proposal/Agreement for the Implementation of a Nuisance Algae Monitoring and Control Program at Furnace Pond – Pembroke, MA**

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Dear Mr. Holman:

Due to the continued success of the algae management program on Furnace Pond we recommend continuing with a similar approach in 2013. Please accept the following as our 2013 Proposal/Agreement for algae control in Furnace Pond.

## **SCOPE OF SERVICES**

### Permitting

Aquatic Control staff will prepare and file for the required *License to Apply Chemicals* permit with the MA DEP – Office of Watershed Management.

### Algae Monitoring

Secchi disk measurements will be collected and reported on a weekly basis by PWA volunteers. These readings will help to track the density of algae, and to determine when treatment and/or sample collections are necessary. During bloom conditions as determined by Secchi disk readings, a single water sample from the “deep-hole” area is to be collected by PWA members (ACT, Inc. will provide sample bottles). The collected samples are to be refrigerated and shipped via overnight mail (either on the day of collection (preferable) or the next day) to our offices in Sutton.

If and when samples are received, Aquatic Control staff will preserve the samples and perform microscopic algae species identification and cell counts by enumeration. These data will be used as a basis to the dosing of copper sulfate treatments in Furnace Pond.

During significant blue-green algae blooms, as determined by species identification and enumeration sampling, an Aquatic Control Biologist will inspect the bloom conditions and collect a one time sample for algae toxin testing. This analysis will be performed by an independent certified laboratory.

### In-Pond Algae Control

Based upon the results of the algae monitoring and water clarity readings, Aquatic Control in conjunction with the PWA will jointly determine if and when an algaecide treatment is to be performed. If treatment is deemed necessary, the treatment will be scheduled for a mutually agreeable date that will allow notification of the Association, Town, and public. Prior to the scheduled treatment date Aquatic Control will provide the Association with pre-printed signs for posting around the shoreline of the pond. The signs will warn of the treatment date and the temporary water-use restrictions to be in effect post-treatment. Although the USEPA copper sulfate label does not require any restrictions on the use of treated water following treatment, Aquatic Control will, as an extra precaution, close the pond to all uses on the day of treatment only. This is in keeping with good pesticide use practices. If desired Aquatic Control will also provide the Association with a written treatment notification for distribution to local media outlets.

Copper sulfate treatments will be performed using Aquatic Control's specially equipped spray boats. Dissolved copper sulfate crystals will be evenly applied throughout the designated treatment zone(s). Dose will be determined by the dominant algae species assemblage, but will likely range between 0.25-0.3 ppm copper sulfate.

ACT does not guarantee the extent or duration of nuisance algal controlled in Furnace Pond post-treatment. Each waterbody responds differently to algaecide treatment.

**TENTATIVE SCHEDULE OF PERFORMANCE**

- ◆ Permitting .....February
- ◆ Pre-treatment inspection ..... late May/early June
- ◆ Algal monitoring ..... June- September
- ◆ Algal treatment .....July –September (as required)

**INSURANCE**

Aquatic Control carries workmen's compensation, property damage and liability insurance which will remain in effect throughout the duration of this Agreement (December 31, 2013). A "certificate of insurance" will be provided to the Association upon request.

**CLIENT (PWA) RESPONSIBILITIES**

- Full compliance with the Pembroke Conservation Commission's, Order of Conditions (OOC) permit for this project, unless otherwise agreed to in writing by ACT.
- Collection of surface grab algae samples as necessary; prompt overnight shipping of samples to ACT office.
- Measurement and reporting of weekly Secchi disk readings.
- All pre-treatment notifications of pending chemical treatments. ACT to provide a written "notice of treatment" for distribution to local media outlets, if desired
- Posting of pre-printed signs around the entire Furnace Pond shoreline prior to copper sulfate treatments. ACT to provide the signs and posting instructions.
- Compliance/enforcement (to the extent possible) of the temporary water use restrictions to be imposed post-treatment.

**COST AND PAYMENT SCHEDULE:**

<b>Permitting (Furnace Pond)</b>	
▪ Massachusetts DEP Permit	\$250

<b>Algae Monitoring (Furnace Pond)</b>	
▪ ID species and cell count of weekly algae samples (3-4 discretionary samples @ \$100/sample, if necessary)	\$425
▪ Toxic algae testing (sample collection & analysis – one sample @ \$500/sample)	\$525
<b>Algae Monitoring Total</b>	<b>\$950</b>

MANAGEMENT PROGRAM TASK	COST
<b>In-Pond Algae Control (Furnace Pond)</b>	
▪ Whole pond copper sulfate treatment (two treatments @ \$2,950/treatment - inclusive of all materials, labor, and equipment)	\$5,900
<b>In-Pond Algae Control Total</b>	<b>\$5,900</b>

<b>TOTAL MONITORING &amp; CONTROL PROGRAM COST</b>	<b>\$7,100</b>
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Invoices will be submitted upon completion of each task and payment, in full, will be due within 30 days of the receipt of each invoice. A deposit of \$1,000 is required to initiate the permitting process.

Specific, mutually agreeable date(s) for chemical treatment will be scheduled with an Association representative in advance. Our ability to proceed with this management program is contingent upon timely receipt of the required permits. **In order to file your permits in a timely manner it is important that this proposal be signed and returned as soon as possible or before March 15, 2013.** In the meantime, if you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

**Aquatic Control Technology**



Marc D. Bellaud  
President/Aquatic Biologist

**Accepted By: Pembroke Watershed Association**

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