

**Potentially Toxigenic (PTOX) Cyanobacteria Screen**  
Aquatic Systems, Inc.

Prepared: July 13, 2016

Prepared By: GreenWater Laboratories

Sample Received: 7/13/16

<u>Sample ID</u>	<u>Site</u>	<u>Collected</u>
1) CVE MASTER Shoreline	2	7/12/16
2) CVE MASTER Open Water	2	7/12/16
3) CVE MASTER Irrigation Pipe	2	7/12/16

**Method**

One mL aliquots of the Open Water and Irrigation Pipe samples were prepared using Sedgewick Rafter cells. The filamentous algae sample (Shoreline) was mixed and 5-subsets were removed. Wet mounts were prepared of the subset material. The samples were scanned at 100X for the presence of potentially toxigenic (PTOX) cyanobacteria using a Nikon Eclipse TE200 inverted microscope equipped with phase contrast optics. Higher magnification was used as necessary for identification and micrographs.

**Results****CVE MASTER Shoreline**

The sample was dominated by the potentially toxigenic (PTOX) cyanobacterium *Lyngbya wollei*. The PTOX cyanobacteria *Phormidium* spp. and *Dolichospermum* sp. were also observed.

***L. wollei* has been shown to produce paralytic shellfish toxins/saxitoxin in the United States and cylindrospermopsin in Australia. *Phormidium* species have been known to produce aplysiatoxins, microcystins, anatoxin-a/homoanatoxin-a, saxitoxins and cylindrospermopsin. *Dolichospermum* is a potential microcystin, anatoxin-a, saxitoxins and cylindrospermopsin producer.**

**Recommendations**

Based on *L. wollei* densities, priority for paralytic shellfish toxins/saxitoxin analysis is currently recommended. Other toxins that may be present include aplysiatoxin, anatoxin-a/homoanatoxin-a, cylindrospermopsin, microcystins and anatoxin-a.

## CVE MASTER Open Water

The sample was dominated by the PTOX cyanobacteria *Dolichospermum* spp. and *Planktothrix* sp.

### Recommendations

Based on these observations, toxin analysis for microcystins, anatoxin-a, saxitoxin, and cylindrospermopsin is currently recommended.

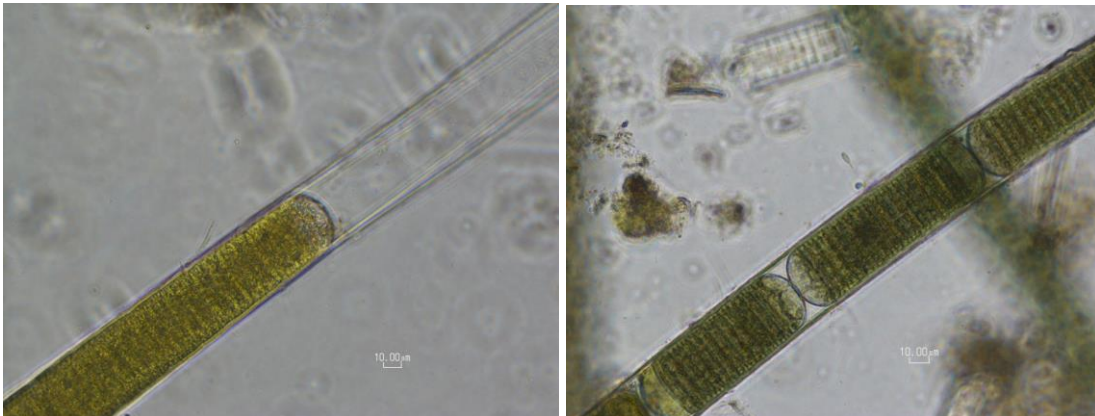
## CVE MASTER Irrigation Pipe

PTOX cyanobacteria were not observed.

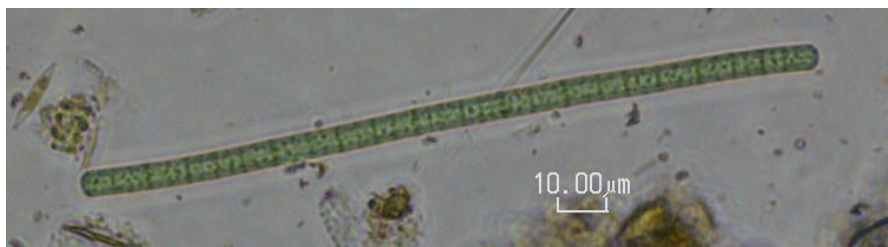
### Recommendations

Due to the absence of PTOX cyanobacteria, toxin analysis is not recommended.

## Micrographs



*Lyngbya wollei* at 400x (CVE MASTER Shoreline)

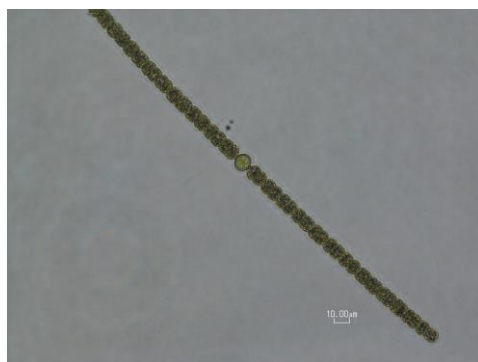




*Phormidium* sp. at 400x (CVE MASTER Shoreline)



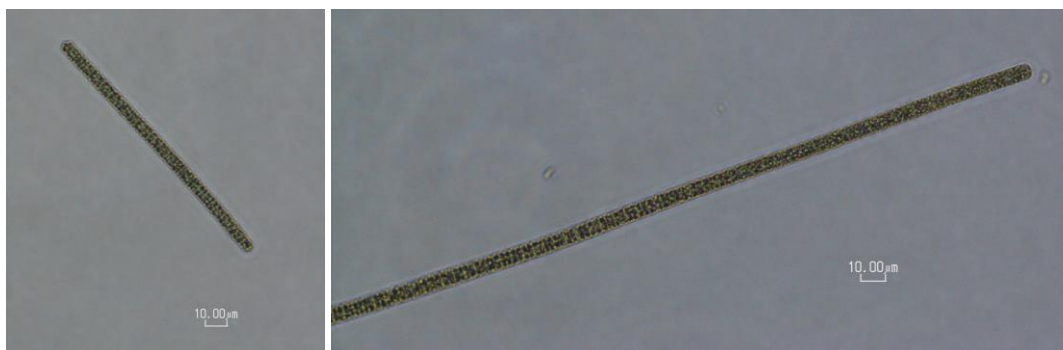
*Dolichospermum* sp. at 400x (CVE MASTER Shoreline)



*Dolichospermum* sp. 1 (straight) at 400x (CVE MASTER Open Water)



*Dolichospermum* sp. 2 (coiled) at 400x (CVE MASTER Open Water)



*Planktothrix* sp. at 400x (CVE MASTER Open Water)

Submitted by:

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Date:

7/13/16