**Water-Quality Data**

Duplicates were collected three times each year for nutrients, chlorophyll, and microcystin concentrations. One duplicate sample had incomplete nutrient analyses. The data are presented in the file “Nutrient Chl-a Microcystin qa qc data.”

The percent differences between duplicate samples were

* NH3+organic N: 0–8.1 percent; median 2.6 percent
* Dissolved NO3+NO2: 7.1–96.2percent; but in 3 cases, both samples were below detection limit
* Dissolved nitrite: 12.5–1,000 percent; but in 2 cases, both samples were below detection limit and third case one sample was below the detection limit and the other was at the limit
* Total phosphorus: 0–7.7 percent; median 0 percent
* Dissolved total nitrogen: 0–8.1 percent; median 4.5 percent
* Total N: 1–57.3 percent; median 8 percent
* Chlorophyll: 0.7–19.9 percent; median 4.6 percent
* Microcystin: 2.3–41.4 percent; median 23 percent

Both samples were below the detection limit, equal, or one was below and the other at the limit for

* Ammonia
* Orthophosphate
* Dissolved phosphorus

Due to the small concentrations involved with the nutrient constituents, the differences between duplicate analyses are not a concern.

**Plankton Data**

Data on phytoplankton and zooplankton duplicate samples are within the plankton data files in appendix 2.

Duplicates were collected on the same dates as the water-quality samples.

At site B2 on 9-11-2012 and 6-26-2012

At site B3 on 8-2-2011 and 10-25-2011

At site B5 on 10-25-2011

At site B6 on 6-26-2012

Duplicate samples are labeled with the site name and a letter, for example, B2-A.

## Quality-Control Considerations for Assessing Molecular Methods

Quality-control samples were analyzed to aid in the assessment of the methods and interpretation of the data. A filter blank was performed every day samples were filtered. An extraction blank was run with every extraction batch, and a no-template control was added in duplicate to each qPCR or qRT-PCR plate. There were low-level detections in one or more blanks for total cyanobacteria DNA gene, *Microcystis mcyE* DNA toxin gene, *Planktothrix mcyE* DNA toxin gene, and *Planktothrix mcyE* RNA transcript assays. All detections from blank samples were used to create the limit of detection applied to all samples for each assay.

### Analytical Variability of Molecular Methods

A total of six concurrent replicates were analyzed by molecular methods. All six replicates were analyzed using the DNA methods, and one was analyzed using the RNA methods (due to only analyzing the samples from buoys 1 and 2 by RNA methods). To determine the analytical variability of each assay, the absolute value log10 difference (AVLD) was calculated for each replicate sample; data are listed in table 5–1. The AVLD was determined by calculating the absolute value of the difference between concentration results for two replicate samples that were log10 transformed. Average AVLDs for the assays ranged from 0.09 to >0.58 copy/100 mL. The *Microcystis mcyE* DNA toxin geneassay had the largest average AVLD at >0.58 copy/100 mL, followed by the total *Microcystis* DNA gene and *Planktothrix mcyE* RNA transcript assays at 0.47 copy/100 mL. The average AVLDs for the RNA transcript assays may not be accurate due to only one replicate pair being analyzed.