

Big Sandy Reservoir Harmful Cyanobacterial Investigation 2018

Waterbody Information	
Waterbody Name	Big Sandy Reservoir
Waterbody Type	Lake/Reservoir
Waterbody Size	2,145 acres
County	Sublette/Sweetwater
Management Agency	Bureau of Reclamation
Irrigation District	NA
Drinking Water Intake	No
HCB Advisory Information	
Date Issued by WDH	September 13, 2018
Date Lifted by WDH	October 25, 2018
Cyanobacteria Threshold	20,000 cells/mL
Cyanotoxin Threshold(s)	10.0 µg/L total microcystins
Sample Data	
Sample Date	September 11, 2018
Sample Location	Dam (42.246482, -109.429993)
Cyanobacteria Density	39,935,687 cells/mL
Dominant Taxon	<i>Dolichospermum lemmermannii</i>
Total Microcystins	< 0.15 µg/L
Initial Complainant	CyAN satellite imagery

Summary

On September 5, 2018, the Wyoming Department of Environmental Quality (DEQ) reviewed satellite imagery from the [Cyanobacteria Assessment Network](#) (CyAN) that identified elevated densities of cyanobacteria covering a large area of Big Sandy Reservoir. On September 11th, DEQ visited Big Sandy Reservoir and observed dense accumulations of cyanobacteria at the Dam. DEQ collected samples for cyanobacteria and cyanotoxin analyses. On September 13th, DEQ received results that average cyanobacteria cell densities exceeded the 20,000 cells/mL recreational use threshold identified in the [Wyoming Harmful Algal Bloom Action Plan](#) (Action Plan). DEQ relayed these results to the Wyoming Department of Health (WDH) and WDH issued a recreational use advisory for Big Sandy Reservoir. On October 25th, Sublette County Public Health (SUCPH) provided visual evidence that the bloom had dissipated at the reservoir and CyAN satellite imagery confirmed these findings. DEQ informed WDH that the blooms had dissipated and WDH lifted the advisory. On November 8th, DEQ received results that average total microcystins were non-detect and did not exceed the 10 µg/L recreational use threshold at the time of sampling.

Map 1. Sample sites at Big Sandy-Eden Reservoir complex.



0 1.5 3 Miles

● Sample Site(s)

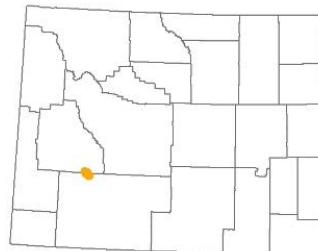




Figure 1. Cyanobacteria at Big Sandy Reservoir southern shoreline



Figure 2. Cyanobacteria among rocks at Big Sandy Reservoir shoreline



Figure 3. Cyanobacteria close-up at Big Sandy Reservoir

Table 1. Cyanobacteria Identification and Enumeration Results

Location	Date	Taxon	Total Average Density (cells/mL)
Dam	9/11/2018	<i>Dolichospermum lemmermannii</i>	39,935,687

Table 2. Cyanotoxin Enzyme-Linked Immunosorbent Assay (ELISA) Results

Location	Date	Total Microcystins (µg/L)
Dam	9/11/2018	< 0.15