

## Wheatland Reservoir #1 Harmful Algal Bloom Investigation 2018

Waterbody Information	
Waterbody Name	Wheatland Reservoir #1
Waterbody Type	Lake/Reservoir
Waterbody Size	384 acres
County	Platte
Management Agency	Wheatland Irrigation District
Irrigation District	Wheatland Irrigation District
Drinking Water Intake	No
HCB Advisory Information	
Date Issued by WDH	August 23, 2018
Date Lifted by WDH	September 6, 2018
Cyanobacteria Threshold	20,000 cells/mL
Cyanotoxin Threshold(s)	10.0 µg/L total microcystins
Sample Data	
Sample Date	August 15, 2018
Sample Location	East Beach (42.0001243, -105.026226)
Cyanobacteria Density	6,001,402 cells/mL
Dominant Taxon	<i>Aphanizomenon flos-aquae</i>
Total Microcystins	2.85 µg/L
Initial Complainant	Lake management

### **Summary**

On August 14, 2018, the Wyoming Department of Environmental Quality (DEQ) was notified by the Wheatland Irrigation District that cyanobacteria clumps and shoreline rings were observed at the eastern shore of Wheatland Reservoir #1. On August 15<sup>th</sup>, DEQ visited Wheatland Reservoir #1 and observed cyanobacteria at the East Beach. DEQ collected samples for cyanobacteria and cyanotoxin analyses. On August 20<sup>th</sup>, DEQ received results that average cyanobacteria cell densities exceeded the 20,000 cells/mL recreation use threshold identified in the [Wyoming Harmful Algal Bloom Action Plan](#) (Action Plan). DEQ relayed the results to Wyoming Department of Health (WDH) and WDH issued a recreational use advisory on August 23<sup>rd</sup>. On August 24<sup>th</sup>, DEQ received results that average total microcystins at the East Beach were below the 10 µg/L recreational use threshold. On September 6<sup>th</sup>, DEQ visited the reservoir and confirmed that the bloom had dissipated on Wheatland Reservoir #1; this information was relayed to WDH and WDH lifted the recreational use advisory.

Map 1. Wheatland Reservoir #1 sampling site



0 0.5 1 Miles

● Sample Location(s)

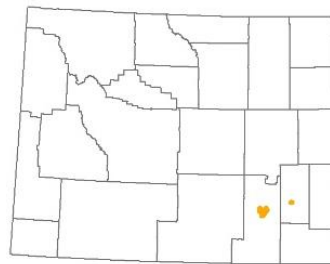




Figure 1. Wheatland Reservoir #1 - Turquoise cyanobacterial rings on shoreline



Figure 2. Wheatland Reservoir #1 - Floating cyanobacteria near shore (dark green clumps)

Table 1. Cyanobacteria Identification and Enumeration Results

Location	Date	Taxon	Average Density (cells/mL)	Total Average Density (cells/mL)
East Beach	8/15/2018	<i>Aphanizomenon flos-aquae</i>	5,372,421	6,001,402
		<i>Pseudanabaena</i>	463,764	
		<i>Dolichospermum circinale</i>	165,216	

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

Location	Date	Total Microcystins (µg/L)
East Beach	8/15/2018	2.85