

**Little Cedar Lake Protection & Rehabilitation District
State of WI DNR Surface Water Grant to study E. coli Levels Summer 2016**

I. Introduction

The Washington County Health Department monitors the level of E. coli in the water at county park beaches on a regular basis between Memorial Day and Labor Day, and twice weekly if levels are found to be significantly elevated. As such, water at the public beach at Ackerman's Grove County Park on Little Cedar Lake (LCL) is routinely monitored. A swim advisory is posted at the beach if the E. coli level is >235 MPN/100 ml; the beach is closed if the E. coli level is >1000 MPN/100 ml. From 07/13/2015 to 09/02/2015, E. coli levels at the Ackerman's Grove beach were high enough to warrant the posting of a swim advisory on six occasions, and the level from the sample taken on 08/23/2015 (1203 MPN/100ml) necessitated beach closure. Many local residents became aware of the E. coli issue when the beach closure was reported on Channel 58's evening newscast on 08/27/2015. The topic was subsequently addressed at the Little Cedar Lake Protection & Rehabilitation District (LCLPRD) Annual Meeting on 09/01/2015, and District residents expressed concern for the potential implications the elevated E. coli levels at Ackerman's beach may have for the rest of LCL. Given the potential for E. coli ingestion to cause subsequent illness, and the widespread use of LCL for swimming and water sports in areas well beyond Ackerman's beach, the LCLPRD commissioners decided to pursue testing for E. coli at various locations around the lake, to determine whether periodic elevations occur in those areas as well. Two of the commissioners met with Heidi Bunk, WI DNR Water Resources Management Specialist, and were made aware of the availability of subsidy for such testing through a WI DNR Lake Management Planning Surface Water Grant. The LCLPRD completed the grant application prior to its December 2015 deadline, and was notified in February 2016 that it had been awarded a Surface Water Grant to study E. coli levels in LCL in June, July and August 2016.

II. Project Description and Timeline

The goal of the project was to document seasonal trends in E. coli levels at nine different locations in LCL. The sites chosen represent where people frequently swim, or are in the water for other activities (e.g., skiing, wake boarding, tubing). A DNR representative established latitude and longitude coordinates and Station ID numbers (see attached Table and Map) and gave the sites Station Names in SWIMS (surface water integrated monitoring system). Volunteers collected water samples at these locations on seven occasions during June, July and August 2016. (The sites were modified following the second collection, in order to more evenly distribute them geographically, as well as to ensure water

collections closer to shore. This accounts for the total of 15 sites over the course of the summer). Water was collected in 250 ml specimen containers provided by the WI State Lab of Hygiene, and samples immediately packed in ice. Samples were then shipped overnight for analysis by the State Lab. Once results were reported, they were recorded on an Excel spreadsheet (see attached).

III. Results

Water samples were twice in June, twice in July, and three times in August. Of the 63 samples sent to the State Lab, there was only one result reported >235 MPN/100 ml: the result for the sample taken at Ackerman's Beach on 6/28/2016 was 270 MPN/100 ml. This result was reported to the Washington County Environmental Health Specialist. Interestingly, the E. coli level from the sample she had obtained the previous day was only 36 MPN/100 ml. On 7/19/2016 the E. coli level at Ackerman's beach was 194 MPN/100 ml; the level in the sample obtained by the Environmental Health Specialist the day prior was 61 MPN/100 ml. The results of all but one of the samples collected elsewhere in LCL over the course of the study were <73 MPN/100 ml; the outlier (228 MPN/100 ml) was from a sample collected on 08/04/2016 along the eastern shoreline of the "kettle". In contrast to Summer 2015, none of the samples collected at Ackerman's Beach by the Environmental Health Specialist over the course of Summer 2015 exceeded 100 MPN/100 ml (<http://www.wibeaches.us/apex/f?p=181:16:0::NO:RP::>)

IV. Conclusion

With the exception of one outlier (the above mentioned E. coli result of 228 MPN/100 ml), E. coli levels at various locations around Little Cedar Lake remained <100 MPN/100 ml throughout June, July and August. The two elevated levels reported for samples we collected at Ackerman's beach were not corroborated by samples obtained the previous days by the Washington County Environmental Health Specialist. We did not observe any seasonal trends in E. coli levels; in fact, the results for the majority of the 63 samples collected over three months remained consistently low. We will continue to monitor Washington County results for E. coli testing of samples obtained from Ackerman's beach during Summer 2017, but at this time, have no indication to pursue additional testing elsewhere on Little Cedar Lake.