

Welcome to the Cedar Lake Improvement Board

Budget Hearing & Regular Public Meeting

December 12, 2025

Board Members

Carolyn Brummund

Jesse Campbell

Dave Dailey

Adam Kline

Terry Dutcher

Fred Strauer

Rex Vaughn

Alcona County Commissioner

Alcona County Road Commission Rep.

Greenbush Twp. Representative

Oscoda Township Manager

Iosco County Commissioner

Iosco County Drain Commissioner

Citizen Riparian Representative

Cedar Lake Improvement Board
Regular Public Meeting & Public Hearing
Greenbush Township Hall
Greenbush, MI 48738
Friday, December 12, 2025
10:00 AM ET

Proposed Agenda

1. Call to Order.
2. Roll Call.
3. Conference Call Meeting Operating Protocol & Housekeeping.
 - a. Audio only, video services not available.
 - b. Please keep your phone muted until invited to speak by the Chair during Public Comments or the Public Hearing.
4. Public Comments (Comments concerning the Public Hearing should be made during the Public Hearing).
5. Approval of Agenda as Presented.
6. Review and Approve Minutes from the October 10, 2025, Regular Meeting.
7. Motion to Recess Meeting for 2026 Budget Public Hearing.
8. Open 2026 Budget Public Hearing.
 - a. Roll Call.
 - b. Public Notices.
 - c. Presentation of 2026 Proposed Budget (Exhibit "A" in the Board Notebook and Packet).
 - d. Open the Hearing for Public Comments.
 - i. Hear public comments on the proposed Budget.
 - ii. Present any written remarks received by the Board prior to or during the Public Hearing.
 - e. Motion to Close the 2026 Budget Public Hearing.
9. Reconvene Regular Meeting.
 - a. Roll Call.
10. Recap of 2025 Actual CLIB Budget through 11/30/2025.
 - a. Actual spending is forecasted to be below budget.
 - b. No budget revisions are required.
 - c. Budget historical spreadsheets (condensed & expanded versions) are included in the Board Notebook and Board Packet.
11. Final Review of 2026 CLIB Proposed Budget and consider adoption of 2026 Budget Resolution. Draft Resolution is included in the Board Notebook and Board Packet.

**CEDAR LAKE IMPROVEMENT BOARD
ALCONA COUNTY & IOSCO COUNTY
RESOLUTION NO. 2025-1
A RESOLUTION TO APPROVE THE CEDAR LAKE
IMPROVEMENT BOARD 2026 ANNUAL BUDGET**

Cedar Lake Improvement Board
Regular Public Meeting & Public Hearing
Greenbush Township Hall
Greenbush, MI 48738
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10:00 AM ET

Proposed Agenda

Cont'd,

12. Old Business.

- a. Kieser & Associates Update by Mark Kieser (call-in) on phosphorus, elevated levels of *E. coli*, and total coliform discovered in the northwest end of Cedar Lake.
 - i. November 18, 2025, complete report on July and August water sampling and analysis.
 1. The first 16 pages of the Technical Memorandum "Cedar Lake Nearshore and Tributary Monitoring to Assess Possible Phosphorus Sources Stimulating Nuisance Algal Growths Near Jones Ditch" are included in the Board Notebook. The full report (86 pages) can be found in the emailed Board Packet and on the CLIB website at the Watershed Management/Monitoring Reports/2025 Nearshore Water Quality Monitoring page.
 - ii. Update on November shallow ground water samples collected on 11-24-25 and what it means for possible DNA sampling.
 1. Shallow ground water testing results and commentary email included in Board Notebook and Board Packet.
- b. Update on Midwest Glacial Lakes Fish Habitat Partnership Grant administered by the Fish & Wildlife Service.
 - i. Correspondence with Justin Chiotti, Habitat Biologist, USFWS - Fish and Aquatic Conservation Program, Region 3 - Midwest Regional Office.
 - ii. Our grant request has been elevated to the Department of the Interior for review.
 - iii. The administration has required that all new awards >\$50 K receive an elevated review to ensure they comply with presidential executive orders.
 - iv. In the meantime, we wait.

13. New Business.

- a. FY 2025 Audit Engagement Letter from Straley Lamp & Kraenzlein, P.C.
 - i. Audit fee will be \$3,500.00, same as previous 2023 audit.
 - ii. Chair requests motion to authorize his signing of the Engagement Letter.
- b. Review and approve bills that were paid since the 10-10-2025 meeting or are now due.
 - i. Kieser & Associates, Watershed Consulting Contract, professional services, Inv. 25-187, \$16,608.15, (new).
 - ii. Bloom Sluggett PC, professional services through 11/30/2025, Inv. 27499, \$1,140.00, (new).
 - iii. Mike's Computer Repair, CLIB Website Updates October through 12/3/2025, Inv. 1938, \$97.50 (new).
 - iv. Alcona County Review, 2026 Budget Public Hearing Notice Display Ad, Inv. 30463, \$105.13, (new).
 - v. Oscoda Press, 2026 Budget Public Hearing Notice Display Ad, Account # 99203325, \$189.75, (new).
 - vi. Rex Vaughn, reimbursement for office supplies (printer paper and laser printer toner), \$220.95 (paid).

Cedar Lake Improvement Board
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Greenbush Township Hall
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Proposed Agenda

Cont'd,

- c. 2026 Meeting Schedule.
 - i. Propose: Friday, Feb. 20, April 10, July 10, Oct. 9, Dec. 11. Dates will be published in the two local newspapers before year's end.
 - ii. Request motion confirming the 2026 Meeting Schedule.
- d. FOIA Request.
 - i. FOIA received 10/30/2025
 - ii. 10-day letter issued 11/6/2025.
 - iii. FOIA Response letter issued 11/20/2025.
 - iv. Copies of the letters included in the Board Notebook and the Board Packet.

14. Public Comment.

15. Next Regular Meeting Date: To Be Determined based upon Item 13c (i) above.

16. Adjournment.

**Cedar Lake Improvement Board Regular Public Meeting
Public Access Instructions**

Friday, December 12, 2025, at 10:00 AM ET

CONFERENCE CALL-IN INFORMATION:

**To join the conference call, participants should call 302-202-1110 & enter Conference Code:
639770**

Cedar Lake Improvement Board Meeting Minutes
Regular Public Meeting
Greenbush Township Hall
Greenbush, MI, 48738
Friday, October 10, 2025

1. Call to order at 10:01 AM.
2. Board Roll Call. Present: Brummund, Kline (pending appointment, not counted for quorum), Dutcher, Strauer, Vaughn. Absent: Campbell and Dailey. There is a quorum.
3. Conference Call Meeting Operating Protocol & Housekeeping was reviewed.
4. Public Comments – None.
5. Approval of 10-10-2025 Agenda as presented. Motion made by Brummond/Dutcher. Motion carried.
6. Review and approve minutes from 7-11-2025 Regular Meeting. Motion made by Brummond/Dutcher. Motion carried.
7. Old Business
 - a. Update on search for a new scribe.
 - i. Commissioner Brummond stated Kelly VonFintel, of Alcona MSU Extension, would like to take the position. Ms. VonFintel arrived, and introductions were made.
 - b. Chairman Vaughn stated Mr. Adam Kline is expected to be the Oscoda Township representative to the CLIB and was observing the meeting.
 - c. Update on Midwest Glacial Great Lakes Partnership Grant:
 - i. The \$84,000 grant was awarded earlier this year. All federal paperwork has been completed and accepted by federal authorities.
 - ii. We are still awaiting funding due to the government shutdown.
 - iii. We are being told it will be distributed this Fall should the government return to work. At the moment, the funding delay is not causing a problem except creating a delay with some of the scientific work that Kieser was going to do. The first shovel into the ground is still expected to be Fall 2026 during the dry period as the area to be worked on is a wetland area. EGLE will not want us to disturb wetlands during a wet part of the year.
 - iv. Engineering, permitting and bidding still need to be done.
 - d. Response to Oscoda Township Letter dated 4-09-2025: The letter was sent to the Township on 8-12-2025. A copy of that letter is in the Board Notebook and Board Packet.
8. New Business
 - a. Chair request for year-end accounting support for preparation of FY 2026 Budget, Public Hearing, Budget Resolution, and upcoming FY 2025 Audit.
 - i. The Board had previously employed Nick Cordes from our accounting firm to assist in the preparation of the budget that was presented during the December 2024 meeting. Chairman Vaughn would like Mr. Cordes to repeat that service to assist Chairman Vaughn who has been doing it for many years, and to help present the budget at the next CLIB Board meeting.
 - ii. Hiring Mr. Cordes would likely be an expense between \$800-\$1,000. Chairman Vaughn has asked Mr. Cordes if he would be willing to provide this service and he (Mr. Cordes) believes that is a service he is able to provide.
 - iii. Chairman Brummond commented that the board should utilize Mr. Cordes throughout the year on an as-needed basis for other accounting services.

- iv. Motion by Brummond to authorize the Chair to contract with Nick Cordes for services of closure of the 2025 year and assistance in preparation of the 2026 budget. Seconded by Dutcher. **ROLL CALL:** Brummond YES, Dutcher, YES, Strauer, YES, Vaughn, YES. Motion carried. No nays.
- b. Chair request to solicit for bids for gravel driveway installation at Jones Ditch.
 - i. After selling the parcel east of Cedar Lake Road, the residential driveway that existed at 3325 W. Cedar Lake Rd went to the new owners. The CLIB will need a new driveway to access the property along Jones Ditch. The land division application submitted to the county in 2024 included a survey locating the new driveway and included an approved Road Commission permit for a driveway. It is described as a "24-foot minimum, 15-inch, corrugated steel pipe". It is staked out on the property. There has been no need, thus far, to start any construction, as we have not needed heavy vehicle access to the property. With the upcoming grant project, we are going to need our own access to the property from Cedar Lake Rd.
 - ii. If approved by the Board, we need to receive bids to have a driveway installed. The driveway was not included in any of the grant project's scope of work, so the money is going to have to come from our General Fund.
 - iii. It was noted by Drain Commissioner Strauer that county permits are only good for one-year. Chairman Vaughn stated he would get an updated permit from the Road Commission prior to soliciting bids.
 - iv. Chairman Vaughn stated he would solicit for bids in the local papers. Drain Commissioner Strauer made a motion to allow Chairman Vaughn to solicit for bids. Seconded by Dutcher. Brummond asked when this project might happen. Vaughn stated Spring 2026. **ROLL CALL:** Brummond YES, Dutcher, YES, Strauer, YES, Vaughn, YES. Motion carried. No nays.
- c. High levels of *E. coli* and total coliform discovered in northwest end of Cedar Lake.
 - i. During the Cedar Lake Summer Vegetation Survey in early July 2025, the Kieser & Associates (K&A) survey team observed a small area in the northwest end of the lake that had "luxuriant growth" of filamentous green algae and *Chara sp* (AROS 358 along the near shoreline in the northwest end of the lake in front of two residences). It was an excessive amount of growth in this small corner, and no other instances of this type of growth were found anywhere else on the lake during the survey. The growth was so thick that you could not access the area with a power boat.
 - ii. As a precaution, and with authorization from the Chair, K&A collected a limited number of water quality samples from select nearshore locations on July 2, 2025.
 - iii. The samples were tested for total and soluble reactive phosphorus, and screened for the presence of *E. coli*, a common gut-tract bacterium associated with fecal wastes from mammals and avian species.
 - iv. Mark Kieser, of K&A, joined the meeting via telephone, to talk about the field screening results, and to discuss possible sources of the contamination. Mr. Kieser is the CLIB's watershed consultant scientist. He has been affiliated with the CLIB for 20 years. Natalie Crum, also of K&A, was also on the phone. She helped with the survey.
 - v. The field screening testing results revealed the potential for very high levels of *E. coli* bacteria that could be harmful. The K&A report of the initial July findings is in the Board Notebook and Board Packet.
 - vi. During July, K&A and the Board Chair rigorously engaged DHD2, EGLE, and the two property owners. DHD2 visited the site and concluded that the septic systems were in compliance with DHD2 standards, and there was not much more they could do to help locate the *E. coli* source. They did not test the nearshore lake water as they claimed their *E. coli* beachfront sample collection protocol was inappropriate due to the lake bottom conditions (too shallow, too much muck).

- vii. Meeting with EGLE's Non-Point Source pollution staff also proved to be frustrating as EGLE has limited authority and funding to intervene in potential water contamination from septic systems that appear to be in compliance.
 - viii. The K&A report of the initial July findings was shared with DHD2 and EGLE in July.
 - ix. To further document water quality conditions and search for the *E. coli* source, K&A executed a second and more detailed water quality sampling plan on 8/27/2025. Those testing results are being incorporated into a second K&A Report that Mark Kieser summarized for the CLIB at the 10/10/2025 Meeting. The testing included total and soluble reactive phosphorus at Great Lakes Environmental Center, and lab testing for *E. coli* and Total Coliforms at Enviro Lab Services in Oscoda, an EGLE certified lab.
 - x. Annotated Maps for Total Phosphorus (TP), Soluble Reactive Phosphorus (SRP), *E. coli*, and Total Coliform were reviewed with the Board and explained by Mr. Kieser. The maps are included in the Board Notebook and the online Board Packet for reference.
 - 1. Note: A completed copy of the second K&A report is pending and is not included in the Board Notebook and Board Packet. An electronic copy of the second report will be uploaded to the CLIB website when completed.
 - xi. Based upon the data collected so far, Mr. Kieser reported that it is unknown if the *E. Coli* is caused by animal or human sources. He recommended that genetic (DNA) testing would be the logical next step.
 - xii. Mr. Kieser was asked about the cost for DNA testing to find out if the bacteria is human or animal. He estimated \$150-\$300 per sample. He also estimated that six surface water samples for DNA markers should be collected, and another six samples from be shallow ground water sites along the shoreline. Testing can be done in November when the Kieser team returns to the area for data retrieval on the lake hydrology sensors.
 - xiii. Chairman Vaughn stated that the two property owners that are near the problem area are extremely cooperative and have given permission for CLIB to test the water on their property.
 - xiv. A motion was made by Dutcher/Strauer to authorize the Chairman to contract with Kieser & Associates to perform genetic DNA testing of surface water and groundwater samples at a price not to exceed \$5000. **ROLL CALL:** Brummond YES, Dutcher, YES, Strauer, YES, Vaughn, YES. Motion carried. No nays.
- d. Late Summer Vegetation Survey
- i. Natalie Crum of Kieser & Associates gave the update on the survey they conducted on August 26 & 27. There was a good mix of native plants in the lake. There was also an excessive amount of *Chara* sp. observed during the survey. Eurasian Watermilfoil and starry stonewort were also found. In the southern portion of the lake there are a lot of water lilies and a good distribution of native plants. There was a little increase in the appearance of Eurasian Watermilfoil.
 - ii. The contractor from Solitude was contacted to treat the nuisance species.
- e. Lake Treatment Update
- i. Cedar Lake was treated with aquatic herbicides on September 18, 2025.
 - ii. A total of 14 acres were treated. Nine spots of lakeshore phragmites were treated along the shoreline.
 - iii. Treatment maps located in Board Notebook and Board Packet.
- f. Review and approve bills that have been paid since the 7-10-20 meeting or are now due.
- i. Summer Property Tax Bills for CLIB Property in Greenbush Township. All bills \$0.00 as property is exempt. No action required by the Board, info only.
 - ii. Bloom Sluggett PC, professional services through 7-31-2025, Inv. 26839, \$2,833.00 (paid).
 - iii. Bloom Sluggett PC, professional services through 8-31-2025, Inv. 26991, \$102.00 (paid).
 - iv. Kieser & Associates, 2025/2026 Watershed Consulting Contract, professional services, Inv. 25-135, \$3,337.50 (paid).

- v. Kieser & Associates, 2025/2026 LakeScan Contract, professional services, Inv. 25-134, \$3419.60, (paid).
- vi. Kieser & Associates, 2025/2026 Watershed Consulting Contract, professional services, Inv. 25-146, \$5,188.00 (paid).
- vii. Great Lakes Environmental Center, Inc, Cedar Lake Water testing, Inv. 35628, \$158.00 (paid by CLIB, then credited back to CLIB by K & A).
- viii. Enviro Lab Services, Clear Lake Water E. Coli Testing, Inv. 004208, \$550.00 (paid).
- ix. Alcona County Review, WMP Public Meeting Display Ad, Inv. 30087, \$203.50 (paid).
- x. Oscoda Press, WMP Public Meeting Display Ad, Account # 99203325, \$280.75, (paid).
- xi. Solitude Lake Management, June Lake Survey, Inv. PSI87443, \$900.00 (paid).
- xii. Solitude Lake Management, July Aquatic Herbicide Lake Treatment, Inv. PSI 1187482, \$7,640.51 Paid).
- xiii. Solitude Lake Management, September Aquatic Herbicide Lake & Phragmites Treatment, Inv. PSI204809, \$5891.47 (paid).
- xiv. US Postal Service, PO Box Annual Service Fee, \$78.00, (paid).
- xv. Mike's Computer Repair CLIB Website updates May through Sept 2025, Inv .1935, \$65.00 (paid).
- xvi. Kieser & Associates, 2025/2026 LakeScan Contract, professional services, Inv. 25-143, \$4,510.00, (new).
- xvii. Kieser & Associates, Credit Memo 2025/2026 Watershed Consulting Contract, professional services, Inv. 25-165, \$1,418.25 (new).
- xviii. Kieser & Associates, 2025/2026 LakeScan Contract, professional services, Inv. 25-143, \$4,510.00, (new).
- xix. Motion by Brummond/Strauer to pay bills f(ii) through f(xv). **ROLL CALL:** Brummond YES, Dutcher, YES, Strauer, YES, Vaughn, YES. Motion carried. No nays.
- xx. Motions made by Vaughn/Strauer to pay bills f(xvi) through f(xviii). **ROLL CALL:** Brummond YES, Dutcher, YES, Strauer, YES, Vaughn, YES. Motion carried. No nays.

9. Public Comment

- a. Martin Leach, President AICLA Board. Concerned about amount of *Chara* on the lake bottom at his property on the lake. Asked the board if anything that was discussed today had anything to do with a low lake level. Mr. Leach also said he had a case of swimmer's itch this summer for the first time ever. Chairman Vaughn responded by saying that drought conditions ensued at the end of August, which is the likely cause of the low lake level.
- b. No other public comment.

10. Next regular meeting: Friday, December 12, 2025, at 10 AM at the Greenbush Township Hall. This will also be a public budget meeting.

11. Motion to adjourn by Dutcher/Vaughn. Motion carried, adjourned 11:28 AM.

Frosted wilderness morning

By John Pepin
Michigan DNR
"For them who think death's honesty won't fall upon 'em naturally, life sometimes must get lonely."
~ Bob Dylan

In the frosty mornings on November days, with the orange-red sun burning through the crystalline ice and frost like a laser, I find an honest peace and headspace wide enough for my mind to roam.

Over the span of only a few hours overnight, this thick frost has coated every branch of every tree and shrub. Shocks of once green grass growing in the meadow along the old logging road, now are covered in their gray-white and sparkling covering.

The weight of the frost pulls some plants and branches down toward the ground.

As the sun burns on, frost smoke rises over the marsh and then disappears into the sunlight the higher it floats.

There's something about seeing the trees and everything else flocked with frost that makes the silence over the landscape a little more pronounced. It also seems as though the air is cleaner and more intoxicating when I breathe it in deep.

If I touch a frosted branch, leaf or pine bough, the warmth from my hand breaks the spell as the frost melts. The illusion is gone.

So, I don't touch the branches or anything else. I want to keep that sense of profound peace, silence and magical wonder existing all around me for as long as I can.

Usually on days when I find myself within the confines of a snow globe scene such as this, I discover that I have forgotten my camera.

Today is no exception. That's okay. I would love to have images from to reflect upon in the days ahead, but a camera is a distraction from my absolute presence in these moments.

From where I am standing, I can't hear any birds calling, tapping or otherwise making noise. I don't blame them for staying tucked away in their warm little places.

They might be like me sometimes when I'm camping and I know it's freezing outside the tent. I don't get

out of my warm sleeping bag unless I need to.

The need to get out usually involves having to pee.

I know some dudes keep a pee jug or jar in their tent for just such an occasion, but that's just not something I'm going to do.

I think my first experience with this was when I lived in California and was riding north from L.A. to the Monterey area for an Audubon conference. My buddy's truck had a camper on it, and we were just going to park to sleep.

In the middle of the night, of course, I had to brave the cold outdoors to answer nature's call.

When I got back in and finally got resituated and enveloped once again within

As he went about his way, the silence returned to wrap itself around me like a jacket three times larger than what fits me.

the warmth of my sleeping bag, I heard a liquid making a pinging sound off the inside of an empty glass bottle.

It was immediately recognizable.

"What are you doing?"

"Gotta be prepared."

I don't know what he did with the bottle, and I don't want to know.

I had mental pictures of it tipping over and rolling around on the floorboard while he was driving. Yuck!

As though he had heard me thinking about the lack of birdlife around me, a chickadee popped out of one of the trees and landed not far away from me, offering me a chick-dee-dee-dee.

"Well, hello Mr. Chick-diddle-diddle."

As he went about his way, the silence returned to wrap itself around me like a jacket three times larger than what fits me.

I have been searching this week for as much silence as I can find. The good news is that these warm days, cold nights conditions make the icy-blue silence easier to discover.

Outside my house, in the wee hours, there is an almost pounding silence most nights. On others, I can hear the highway buzzing with traffic, even though it's a

Guest Columnist

couple miles away, emergency sirens or dogs barking. This week, I have experienced a couple nights of pure pleasurable silence, another couple filled with the wondrous sounds of northern saw-whet, great horned and barred owls and one night with far-off sirens, which led to the yipping of coyotes.

I was hoping to catch a glimpse of a peaking meteor shower, but even though the skies were clear, the production of meteor sightings was low – at least for me.

As he went about his way, the silence returned to wrap itself around me like a jacket three times larger than what fits me.

I start walking down an old trail that is covered with patches of frost that mask the dirt and gravel in some places. This little path can take me down along the river.

I am certain the water is warmer than the air this morning, even with the sun shining. I move slowly under some big white pine trees, their sap certainly not flowing anywhere.

The sky is cerulean up above the five-needled green pine branches at the highest tops of these trees. I can smell that Christmasy aroma of these big giants, the ground littered with fallen rust-red needles coated in a salting of frost.

Continued on page

THE CLASSIFIEDS

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CEDAR LAKE IMPROVEMENT BOARD NOTICE OF PUBLIC HEARING ON THE PROPOSED 2026 BUDGET

NOTICE IS HEREBY GIVEN that the Cedar Lake Improvement Board (the "Board") will hold a public hearing to consider the Board's proposed 2026 budget. The public hearing will be held at the Greenbush Township Hall, 5039 Campbell Street, Greenbush, MI 48738, on Friday, December 12, 2025, at 10 AM ET.

The Board may not adopt the proposed budget until after the public hearing. A copy of the proposed budget is available for public inspection during normal business hours at the Oscoda Township Clerk's Office, 110 State St. Oscoda MI 48750, and during normal business hours at the Alcona County Clerk's Office, 106 5th St, Harrisville, MI 48740. The budget will also be available for download online on the Cedar Lake Improvement Board web site: <https://cedarlakeib.org>.

The budget will be found in "Meetings", select the "Upcoming Meetings" section, then select "Board Info Packet".

Members of the public will be given the opportunity to be heard in person at the public hearing regarding the proposed budget. Members of the public will also be able to listen remotely to the public hearing via simultaneous public access conference call (audio only) services, see below for access information.

The Board will provide reasonable accommodation to persons with disabilities at the public hearing following five (5) days advance notice. Persons with disabilities requiring such accommodations should contact the Board Chairman at 810-516-6686 during normal business hours.

This Notice of Public Hearing is given by:

Rex Vaughn, Chairman

Cedar Lake Improvement Board

Conference Call-In Instructions for
Friday, December 12, 2025, at 10:00 AM ET:
To join the conference call, participants should call 302-202-1110 & enter Conference Code: 639770

PUBLIC NOTICE IOSCO COUNTY AREA PUBLIC SCHOOL DISTRICTS 2nd SEMESTER 2025-2026 SCHOOL YEAR SCHOOLS OF CHOICE OPENINGS

GRADE	OSCODA	TAWAS AREA	WHITTEMORE-PRESCOTT
K	Unlimited	Unlimited	Unlimited
1	Unlimited	Unlimited	Unlimited
2	Unlimited	Unlimited	Unlimited
3	Unlimited	Unlimited	Unlimited
4	Unlimited	Unlimited	Unlimited
5	Unlimited	Unlimited	Unlimited
6	Unlimited	Unlimited	Unlimited
7	Unlimited	Unlimited	Unlimited
8	Unlimited	Unlimited	Unlimited
9	Unlimited	Unlimited	Unlimited
10	Unlimited	Unlimited	Unlimited
11	Unlimited	Unlimited	Unlimited
12	Unlimited	Unlimited	Unlimited

The above-identified Iosco County Public Schools will now accept applications for enrollment from nonresident pupils for the 2025-2026 school year. Applications are now available.

Completed applications for unlimited student enrollment will be accepted in: Oscoda Area Schools, January 5, 2026 through January 16, 2026; Tawas Area Schools, January 5, 2026 through January 16, 2026; and Whittemore-Prescott Area Schools, December 8, 2025 through December 19, 2025. To obtain an application, contact the Superintendent's Office in the School of Choice District.

Issued by Iosco RESA per State Aid Act of 1979 as amended PA300 of 1996 Section 388.1705 and 38.1705c.

The Iosco Regional Educational Service Agency does not discriminate on the basis of race, color, national origin, sex (including sexual orientation and transgender identity), disability, age, religion, height, weight, marital or family status, military status, ancestry, genetic information or any other legally protected category, (collectively, "Protected Classes"), in its programs and activities, including employment opportunities.

Americanisms



"The wilderness holds answers to questions we have not yet learned to ask."

— Nancy Wynne Newhall

LEGAL & PUBLIC NOTICES

SHORT FORECLOSURE NOTICE - IOSCO COUNTY Notice of Foreclosure by Advertisement. Notice is given under section 3212 of the revised judicature act of 1961, 1961 PA 236, MCL 600.3212, that the following mortgage will be foreclosed by a sale of the mortgaged premises, or some part of them, at a public auction sale to the highest bidder for cash or cashier's check at the place of holding the circuit court in Iosco County, starting promptly at 10:00 AM, on December 17, 2025. The amount due on the mortgage may be greater on the day of the sale. Placing the highest bid at the sale does not automatically entitle the purchaser to free and clear ownership of the property. A potential purchaser is encouraged to contact the county register of deeds office or a title insurance company, either of which may charge a fee for this information. **MORTGAGE:** Mortgagor(s): Kenneth W Pacholka II, a married man Original Mortgagee: Flagstar Bank, FSB Date of mortgage: April 20, 2001 Recorded on April 23, 2001, Liber 629, on Page 694, Foreclosing Assignee (if any): Nationstar Mortgage, LLC Amount claimed to be due at the date hereof: Twenty-Two Thousand Nine Hundred Thirty-Four and 82/100 Dollars (\$22,934.82) Mortgaged premises: Situated in Iosco County, and described as: LOT 886, LAKE HURON SAND BEACH SUBDIVISION NO. 7, AS PER PLAT THEREOF RECORDED IN LIBER 10 OF PLATS, PAGES 3-4 OF IOSCO COUNTY RECORDS Commonly known as 4697 Gaston Way, Oscoda, MI 48750 The redemption period will be 12 month from the date of such sale, unless abandoned under MCL 600.3241a, in which case the redemption period will be 30 days from the date of such sale, or 15 days from the MCL 600.3241a(b) notice, whichever is later; or unless extinguished pursuant to MCL 600.3238. If the above referenced property is sold at a foreclosure sale under Chapter 32 of Act 236 of 1961, under MCL 600.3278, the borrower will be held responsible to the person who buys the property at the mortgage foreclosure sale or to the mortgage holder for damaging the property during the redemption period. Attention homeowner: If you are a military service member on active duty, if your period of active duty has concluded less than 90 days ago, or if you have been ordered to active duty, please contact the attorney for the party foreclosing the mortgage at the telephone number stated in this notice. Nationstar Mortgage LLC Mortgagee/Assignee Schneiderman & Sherman P.C. 23938 Research Dr, Suite 300 Farmington Hills, MI 48335 248.539.7400 1577833 (11-19)(12-10)

NOTICE OF MORTGAGE FORECLOSURE SALE Notice of foreclosure by advertisement. Notice is given under section 3212 of the revised judicature act of 1961, 1961 PA 236, MCL 600.3212, that the following Mortgage will be foreclosed by a sale of the mortgaged premises, or some part of them, at a public auction sale to the highest bidder for cash or cashier's check at the place of holding the circuit court in Iosco County, starting promptly at 10:00 AM, on January 14, 2026. The amount due on the Mortgage may be greater on the day of the sale. Placing the highest bid at the sale does not automatically entitle the purchaser to free and clear ownership of the property. A potential purchaser is encouraged to contact the county register of deeds office or a title insurance company, either of which may charge a fee for this information. Default has been made in the conditions of a

Mortgage made by RICKEY SEWELL to Legacy Mortgage dated January 16, 2024 and recorded January 29, 2024 as Instrument No. 2024000369, Iosco County, Michigan. Said Mortgage is now held by Freedom Mortgage Corporation by assignment and/or merger. There is claimed to be due at the date hereof the sum of \$98,698.41. Said premises are located in Iosco County, Michigan and are described as: Situated in the Township of Oscoda, County of Iosco, and State of Michigan: Lot 39, Weir Woodlands, as per plat thereof recorded in Liber 4 of Plats, Pages 26-28 of Iosco County Records. Commonly known as 5500 Cedar Lake Road, Oscoda, Michigan 48750 Property Tax No. 064-W70-000-039-00 Said property is commonly known as 5500 Cedar Lake Rd, Oscoda, MI 48750. The redemption period shall be 6 months from the date of such sale, unless determined abandoned in accordance with MCLA 600.3241a, in which case the redemption period shall be 30 days from the date of such sale. If the property is sold at foreclosure sale, pursuant to MCL 600.3278, the borrower will be held responsible to the person who buys the property at the mortgage foreclosure sale or to the mortgage holder for damage to the property during the redemption period. TO ALL PURCHASERS: The foreclosing mortgagee can rescind the sale. In that event, your damages, if any, are limited solely to the return of the bid amount tendered at sale, plus interest. Please be advised that any third party purchaser is responsible for preparing and recording the Sheriff's Deed. If this is a residential Mortgage, the following shall apply: ATTENTION HOMEOWNER: If you are a military service member on active duty, if your period of active duty has concluded less than 90 days ago, or if you have been ordered to active duty, please contact the attorney for the party foreclosing the Mortgage at the telephone number stated in this notice. THIS COMMUNICATION IS FROM A DEBT COLLECTOR. THIS IS AN ATTEMPT TO COLLECT A

DEBT, AND ANY INFORMATION OBTAINED WILL BE USED FOR THAT PURPOSE. IF YOU: ARE A DEBTOR IN AN ACTIVE BANKRUPTCY CASE; ARE UNDER THE PROTECTION OF A BANKRUPTCY STAY; OR, HAVE RECEIVED A DISCHARGE IN BANKRUPTCY AND YOU HAVE NOT REAFFIRMED THE DEBT, THIS NOTICE IS FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE CONSTRUED AS AN ATTEMPT TO COLLECT A DEBT FROM YOU PERSONALLY. Dated: November 18, 2025 Attorney for the party foreclosing the Mortgage: Thomas E. McDonald (P39312) Brock & Scott, PLLC 5431 Oleander Drive Wilmington, NC 28403 PHONE: (844) 856-6646 File No. 25-29958 (11-26)(12-17)

Notice of Foreclosure by Advertisement

Notice is given under section 3212 of the revised judicature act of 1961, 1961 PA 236, MCL 600.3212, that the following mortgage will be foreclosed by a sale of the mortgaged premises, or some part of them, at a public auction sale to the highest bidder for cash or cashier's check at the place of holding the circuit court in Iosco County, starting promptly at 10:00 AM, on January 7, 2026. The amount due on the mortgage may be greater on the day of sale. Placing the highest bid at the sale does not automatically entitle the purchaser to free and clear ownership of the property. A potential purchaser is encouraged to contact the county register of deeds office or a title insurance company, either of which may charge a fee for this information:

Name(s) of the mortgagor(s): Michelle A McNeven, an unmarried woman Original Mortgagee: Mortgage Electronic Registration Systems, Inc., as mortgagee, as nominee for lender and lender's successors and/or assigns Foreclosing Assignee (if any): PennyMac Loan Services, LLC Date of Mortgage: October 16, 2020

Date of Mortgage Recording: October 21, 2020

Amount claimed due on date of notice: \$49,268.94

Description of the mortgaged premises: Situated in Charter Township of Oscoda, Iosco County, Michigan, and described as: Unit 391, The Villages of Oscoda, a condominium according to the Consolidating Master Deed of The Villages of Oscoda recorded in Liber 852, Pages 15 through 205, inclusive, amended by the First Amendment to the Consolidating Master Deed and Exhibit A: Consolidating Condominium By-Laws recorded in Liber 883, Pages 1-3, inclusive, all of Iosco County Records, and designated as Iosco County Condominium Subdivision Plan No. 27, together with rights in General Common Elements and Limited Common Elements as set forth in said Consolidating Master Deed, and amendments thereto, and pursuant to Act 59 of the Public Acts of Michigan of 1978, as amended.

Common street address (if any): 8115B Colorado St Unit 391, Oscoda, MI 48750-2249

The redemption period shall be 6 months from the date of such sale, unless

determined abandoned in accordance with MCL 600.3241a; or, if the subject real property is used for agricultural purposes as defined by MCL 600.3240(16).

If the property is sold at foreclosure sale under Chapter 32 of the Revised Judicature Act of 1961, pursuant to MCL 600.3278 the borrower will be held responsible to the person who buys the property at the mortgage foreclosure sale or to the mortgage holder for damaging the property during the redemption period.

Attention homeowner: If you are a military service member on active duty, if your period of active duty has concluded less than 90 days ago, or if you have been ordered to active duty, please contact the attorney for the party foreclosing the mortgage at the telephone number stated in this notice.

This notice is from a debt collector. Date of notice: November 26, 2025 Trott Law, P.C. 31440 Northwestern Hwy, Suite 145 Farmington Hills, MI 48334 (248) 642-2515 1578173 (11-26)(12-17)

CEDAR LAKE IMPROVEMENT BOARD NOTICE OF PUBLIC HEARING ON THE PROPOSED 2026 BUDGET

NOTICE IS HEREBY GIVEN that the Cedar Lake Improvement Board (the "Board") will hold a public hearing to consider the Board's proposed 2026 budget. The public hearing will be held at the Greenbush Township Hall, 5039 Campbell Street, Greenbush, MI 48738, on Friday, December 12, 2025, at 10 AM ET.

The Board may not adopt the proposed budget until after the public hearing. A copy of the proposed budget is available for public inspection during normal business hours at the Oscoda Township Clerk's Office, 110 State St. Oscoda MI 48750, and during normal business hours at the Alcona County Clerk's Office, 106 5th St, Harrisville, MI 48740. The budget will also be available for download online on the Cedar Lake Improvement Board web site: <https://cedarlakeib.org>.

The budget will be found in "Meetings", select the "Upcoming Meetings" section, then select "Board Info Packet".

Members of the public will be given the opportunity to be heard in person at the public hearing regarding the proposed budget. Members of the public will also be able to listen remotely to the public hearing via simultaneous public access conference call (audio only) services, see below for access information.

The Board will provide reasonable accommodation to persons with disabilities at the public hearing following five (5) days advance notice. Persons with disabilities requiring such accommodations should contact the Board Chairman at 810-516-6686 during normal business hours.

This Notice of Public Hearing is given by:
Rex Vaughn, Chairman
Cedar Lake Improvement Board

Conference Call-In Instructions for
Friday, December 12, 2025, at 10:00 AM ET:
To join the conference call, participants should call
302-202-1110 & enter Conference Code: 639770

Charter Township of Oscoda NOTICE OF PUBLIC HEARING On Proposed 2026 Budget

The Charter Township of Oscoda Board of Trustees will hold a Public Hearing on the Proposed Township Budget for Fiscal Year 2026 on Monday, December 8, 2025, at 6:30 pm at Robert J. Parks Library, address 6010 N. Skeel Ave, Oscoda, MI 48750.

The property tax millage rate proposed to be levied to support the proposed budget will be a subject of this hearing.

A copy of the budget is available for public inspection at the Township Clerk's office from 9:00am to 4:00pm, Monday through Friday. The Charter Township of Oscoda Board of Trustees will provide necessary reasonable auxiliary aids and services to individuals with disabilities at the meeting upon a seven-day notice to the Oscoda Township Clerk, Oscoda Township Hall, 110 South State Street, Oscoda, Michigan 48750, 989-739-3211 Ext. 220.

Oscoda AuSable Building Authority 2026 Budget Public Hearing Notice BUDGET PUBLIC HEARING Truth in Budgeting Notice

The Oscoda/AuSable Senior Citizens Building Authority will hold a Public Hearing on the proposed budget for Fiscal Year 2026 at the Oscoda/AuSable Senior Citizens Center at 653 SW State St., AuSable, MI on Wednesday, December 10 at 1:00 p.m. A copy of the proposed budget is available for public inspection at the Oscoda/AuSable Township Hall.

The Oscoda/AuSable Senior Center Building Authority will provide necessary reasonable auxiliary aids and services to individuals with disabilities at the meeting upon a seven day notice to the Building Authority by writing or calling the following: Mary Jo Samotis, Treasurer, Building Authority, 4420 N. US-23 Oscoda, Michigan 48750, 989-820-6189.

PUBLIC NOTICE

IOSCO COUNTY AREA PUBLIC SCHOOL DISTRICTS SECOND SEMESTER 2025-2026 SCHOOL YEAR SCHOOLS OF CHOICE OPENINGS

GRADE	Oscoda Area	Tawas Area	Whittemore-Prescott
K	Unlimited	Unlimited	Unlimited
1	Unlimited	Unlimited	Unlimited
2	Unlimited	Unlimited	Unlimited
3	Unlimited	Unlimited	Unlimited
4	Unlimited	Unlimited	Unlimited
5	Unlimited	Unlimited	Unlimited
6	Unlimited	Unlimited	Unlimited
7	Unlimited	Unlimited	Unlimited
8	Unlimited	Unlimited	Unlimited
9	Unlimited	Unlimited	Unlimited
10	Unlimited	Unlimited	Unlimited
11	Unlimited	Unlimited	Unlimited
12	Unlimited	Unlimited	Unlimited

The above-identified Iosco County Public Schools will now accept applications for enrollment from nonresident pupils for the 2025-2026 school year. Applications are now available.

Completed applications for unlimited student enrollment will be accepted in: **Oscoda Area Schools, January 5, 2026 through January 16, 2026; Tawas Area Schools, January 5, 2026 through January 16, 2026; and Whittemore-Prescott Area Schools, December 8, 2025 through December 19, 2025.**

To obtain an application, contact the Superintendent's Office in the Schools of Choice District. **Issued by Iosco RESA per State Aid Act of 1979 as amended PA300 of 1996 Section 388.1705 and 388.1705c.**

The Iosco Regional Educational Service Agency does not discriminate on the basis of race, color, national origin, sex (including sexual orientation and transgender identity), disability, age, religion, height, weight, marital or family status, military status, ancestry, genetic information or any other legally protected category, (collectively, "Protected Classes"), in its programs and activities, including employment opportunities.

CEDAR LAKE IMPROVEMENT BOARD
NOTICE OF PUBLIC HEARING & REGULAR PUBLIC
MEETING

Friday, December 12, 2025
10:00 AM ET

GREENBUSH TOWNSHIP HALL
5039 CAMPBELL STREET
GREENBUSH, MI 48738

PLEASE TAKE NOTICE that the Cedar Lake Improvement Board (CLIB) will hold a Public Hearing on the proposed CLIB 2026 Budget. Note: The official Public Hearing Notice was published in the Alcona County Review & the Oscoda Press on Wednesday, December 3, 2025. Following the Public Hearing, the Board will hold a Regular Public Meeting to review and consider approval of the 2026 Budget and to conduct other general business that may come before the Board.

These meetings will be held on Friday, December 12, 2025, at 10:00 AM ET at the Greenbush Township Hall, 5039 Campbell Street, Greenbush, MI 48738. Simultaneous public access conference call (audio only) services will also be provided. Information to access the conference call service is provided below.

Pursuant to ADA, individuals with disabilities may request aids/services within a reasonable time period to participate in the meeting by contacting the CLIB Chairman at (810) 516-6686.

For further information, please contact the Cedar Lake Improvement Board Chairman at (810) 516-6686.

**Cedar Lake Improvement Board Public Hearing & Regular Public Meeting
Public Access Instructions**

Friday, December 12, 2025, at 10:00 AM ET

CONFERENCE CALL-IN INFORMATION:

To join the conference call, participants should call 302-202-1110 & enter Conference Code:
639770

Cedar Lake Improvement Board Proposed 2026 Budget - Exhibit A

Revenue		2023 Budget	2023 Actual	2024 Budget	2024 Actual	2025 Budget	2025 Projected YTD	2026 Budget
220-000-451.000	Spec. Assessment - Greenbush Twp	65,850.00	66,457.50	65,850.00	68,789.54	65,850.00	66,159.00	65,850.00
220-000-451.001	Spec. Assessment - Oscoda Twp	48,450.00	47,373.36	47,373.00	47,932.41	46,650.00	43,050.00	46,650.00
220-000-524.000	Glacial Lakes Fish Habitat Partnership Grant	0.00	0.00	0.00	0.00	0.00	0.00	29,250.00
220-000-665.000	Interest Income - Bank Deposits	100.00	78.12	80.00	77.19	80.00	118.62	120.00
220-000-665.100	Interest Income - CD Interest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-000-693.000	Sale of Excess Property @ Jones Ditch (Transfer To/From Fund Balance)	0.00	0.00	0.00	0.00	0.00	43,406.15	0.00
	Total Revenue	130,362.00	123,740.31	113,303.00	93,367.44	108,000.00	93,554.99	147,157.00

Beginning Bank Balance	123,748.07	113,916.74	137,482.34	196,660.72	- based on December Projected Activity
Ending Bank Balance	113,916.74	137,482.34	196,660.72	196,660.72	
Certificate of Deposit	0.00	0.00	0.00	0.00	
Total Assets	113,916.74	137,482.34	196,660.72	196,660.72	
Net Change By Year	-11,016.05	23,565.60	59,178.38		

Expenditures		2023 Budget	2023 Actual	2024 Budget	2024 Actual	2025 Budget	2025 Projected YTD	2026 Budget
220-570-801.000	Scribe/Recording Secretary	290.00	290.00	500.00	0.00	1,000.00	840.00	550.00
220-570-801.001	Fiduciary	290.00	290.00	500.00	0.00	1,000.00	840.00	550.00
220-570-805.000	Biennial Audit	3,500.00	4,500.00	3,500.00	3,500.00	0.00	0.00	3,500.00
220-570-805.001	Legal & CPA Consultation Fees	2,500.00	7,528.00	5,000.00	2,411.00	2,400.00	7,666.00	7,500.00
220-570-727.000	Office Supplies	250.00	124.98	250.00	403.39	500.00	416.64	500.00
220-570-728.000	Postage & PO Box	70.00	136.50	150.00	74.00	150.00	78.00	100.00
220-570-802.010	Lake Management Contract	12,000.00	11,480.80	14,448.00	15,731.35	15,206.00	15,445.60	15,627.00
220-570-802.100	Limnologist Special Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-967.000	Natural Shoreline Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-967.001	Fisheries Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-803.000	Consulting Engineering Contract	50,000.00	47,447.49	31,948.00	35,651.50	31,746.00	47,975.90	40,280.00
220-570-971.000	Construction Projects	0.00	199.00	0.00	0.00	0.00	0.00	0.00
220-570-803.100	Fish Habitat Partnership Grant Consulting	0.00	0.00	0.00	0.00	0.00	0.00	29,250.00
220-570-971.100	Fish Habitat Partnership Grant Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-806.000	EGLE Berm Permit Appeal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-804.000	Lake Herbicide Treatment Contract	40,000.00	34,383.59	40,000.00	28,426.90	40,000.00	16,213.98	30,000.00
220-570-861.000	Board Travel Reimbursement	600.00	865.96	250.00	0.00	250.00	0.00	250.00
220-570-901.000	Advertising/Meetings Incl. SAD	250.00	4,062.24	3,500.00	1,881.94	3,500.00	1,939.13	2,750.00
220-570-820.000	SAD Legal & Eng. Services	1,000.00	0.00	1,000.00	0.00	1,000.00	0.00	1,000.00
220-570-932.000	Rainfall Instrument Repair/Replacement	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220-570-961.000	Bank Charges (Oscoda)	120.00	0.00	0.00	35.00	50.00	0.00	50.00
220-570-969.000	Contingency	2,000.00	0.00	2,817.00	0.00	2,548.00	0.00	2,500.00
220-570-933.000	Watershed Construction Projects & Repair	5,000.00	0.00	5,000.00	0.00	5,000.00	0.00	5,000.00
220-570-805.002	Liability Insurance	0.00	801.00	900.00	858.00	900.00	947.00	1,000.00
220-570-808.000	Website Services & Support	0.00	0.00	1,540.00	877.50	750.00	455.00	750.00
220-570-975.000	Jones Ditch Acquisition & Disposition	12,892.00	11,630.75	2,000.00	3,516.86	2,000.00	187.74	5,000.00
220-570-809.000	Water Quality/Sampling/Analysis	0.00	0.00	0.00	0.00	0.00	550.00	1,000.00
Totals:		130,362.00	123,740.31	113,303.00	93,367.44	108,000.00	93,554.99	147,157.00

Cedar Lake Improvement Board Proposed 2026 Budget - Exhibit A (Expanded)

Revenue		2023 Budget	2023 Actual	2024 Budget	2024 Actual	2025 Budget	2025 Projected YTD	2026 Budget	2025 Actual Revenues														
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Projected	Totals								
220-000-451.000	Spec. Assessment - Greenbush Twp	65,850.00	66,457.50	65,850.00	68,789.54	65,850.00	66,159.00	65,850.00	39,422.25	8,127.75	18,609.00												66,159.00
220-000-451.001	Spec. Assessment - Oscoda Twp	48,450.00	47,373.36	47,373.00	47,932.41	46,650.00	43,050.00	46,650.00	13,650.00		19,200.00	4,200.00	4,500.00				750.00			750.00			43,050.00
220-000-524.000	Glacial Lakes Fish Habitat Partnership Grant	0.00	0.00	0.00	0.00	0.00	0.00	29,250.00															0.00
220-000-665.000	Interest Income - Bank Deposits	100.00	78.12	80.00	77.19	80.00	118.62	120.00	6.67	9.06	11.27	10.99	11.19	10.85	10.98	10.80	9.51	9.33	8.97			9.00	118.62
220-000-665.100	Interest Income - CD Interest	0.00	0.00	0.00	0.00	0.00	0.00	0.00															0.00
220-000-693.000	Sale of Excess Property @ Jones Ditch (Transfer To/From Fund Balance)	0.00	0.00	0.00	0.00	0.00	43,406.15	0.00	43,406.15														43,406.15
	Total Revenue	130,762.00	123,740.31	113,303.00	93,367.44	108,000.00	93,554.99	147,157.00	96,485.07	8,136.81	37,820.27	4,210.99	4,511.19	10.85	10.98	10.80	759.51	9.33	758.97		9.00	152,733.77	

Beginning Bank Balance	123,748.07	113,916.74	137,482.34	-based on December Projected Activity
Ending Bank Balance	113,916.74	137,482.34	196,660.72	
Certificate of Deposit	0.00	0.00	0.00	
Total Assets	113,916.74	137,482.34	196,660.72	
Net Change By Year	-11,016.05	23,565.60	59,178.38	

Expenditures		2023 Budget	2023 Actual	2024 Budget	2024 Actual	2025 Budget	2025 Projected YTD	2026 Budget	2025 Actual Expenditures																
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Projected	Totals										
220-570-801.000	Scribe/Recording Secretary	290.00	290.00	500.00	0.00	1,000.00	840.00	550.00		290.00													550.00	840.00	
220-570-801.001	Fiduciary	290.00	290.00	500.00	0.00	1,000.00	840.00	550.00		290.00														550.00	840.00
220-570-805.000	Biennial Audit	3,500.00	4,500.00	3,500.00	3,500.00	0.00	0.00	3,500.00															0.00	0.00	
220-570-805.001	Legal & CPA Consultation Fees	2,500.00	7,528.00	5,000.00	2,411.00	2,400.00	7,666.00	7,500.00	110.00		2,155.00	1,326.00			2,833.00	102.00							1,140.00	7,666.00	
220-570-727.000	Office Supplies	250.00	124.98	250.00	403.39	500.00	416.64	500.00			173.48								22.21	220.95				416.64	
220-570-728.000	Postage & PO Box	70.00	136.50	150.00	74.00	150.00	78.00	100.00									78.00							78.00	
220-570-802.010	Lake Management Contract	12,000.00	11,480.80	14,448.00	15,731.35	15,206.00	15,445.60	15,627.00			2,768.44	524.16			5,343.00		4,510.00						2,300.00	15,445.60	
220-570-802.100	Limnologist Special Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-967.000	Natural Shoreline Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-967.001	Fisheries Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-803.000	Consulting Engineering Contract	50,000.00	47,447.49	31,948.00	35,651.50	31,746.00	47,975.90	40,280.00	1,597.50		2,562.50	5,734.75		4,701.25	6,670.00	3,337.50	5,346.00	1,418.25					16,608.15	47,975.90	
220-570-971.000	Construction Projects	0.00	199.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-803.100	Fish Habitat Partnership Grant Consulting	0.00	0.00	0.00	0.00	0.00	0.00	29,250.00																0.00	
220-570-971.100	Fish Habitat Partnership Grant Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-806.000	EGLE Berm Permit Appeal	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-804.000	Lake Herbicide Treatment Contract	40,000.00	34,383.59	40,000.00	28,426.90	40,000.00	16,213.98	30,000.00			1,782.00						14,431.98							16,213.98	
220-570-861.000	Board Travel Reimbursement	600.00	865.96	250.00	0.00	250.00	0.00	250.00																0.00	
220-570-901.000	Advertising/Meetings Incl. SAD	250.00	4,062.24	3,500.00	1,881.94	3,500.00	1,939.13	2,750.00	198.75		656.13				203.50	280.75							600.00	1,939.13	
220-570-820.000	SAD Legal & Eng. Services	1,000.00	0.00	1,000.00	0.00	1,000.00	0.00	1,000.00																0.00	
220-570-932.000	Rainfall Instrument Repair/Replacement	0.00	0.00	0.00	0.00	0.00	0.00	0.00																0.00	
220-570-961.000	Bank Charges (Oscoda)	120.00	0.00	0.00	35.00	50.00	0.00	50.00																0.00	
220-570-969.000	Contingency	2,000.00	0.00	2,817.00	0.00	2,548.00	0.00	2,500.00																0.00	
220-570-933.000	Watershed Construction Projects & Repair	5,000.00	0.00	5,000.00	0.00	5,000.00	0.00	5,000.00																0.00	
220-570-805.002	Liability Insurance	0.00	801.00	900.00	858.00	900.00	947.00	1,000.00			947.00													947.00	
220-570-808.000	Website Services & Support	0.00	0.00	1,540.00	877.50	750.00	455.00	750.00					390.00							65.00				455.00	
220-570-975.000	Jones Ditch Acquisition & Disposition	12,892.00	11,630.75	2,000.00	3,516.86	2,000.00	187.74	5,000.00		187.74														187.74	
220-570-809.000	Water Quality/Sampling/Analysis	0.00	0.00	0.00	0.00	0.00	550.00	1,000.00									550.00							550.00	
	Totals:	130,762.00	123,740.31	113,303.00	93,367.44	108,000.00	93,554.99	147,157.00	1,906.25	767.74	8,315.55	8,987.91	1,716.00	4,701.25	6,670.00	11,717.00	20,788.73	6,015.46	220.95			21,748.15	93,554.99		

CEDAR LAKE IMPROVEMENT BOARD

ALCONA COUNTY & IOSCO COUNTY

RESOLUTION NO. 2025-1

At a regular meeting of the Cedar Lake Improvement Board (the “Lake Board”) held on December 12, 2025, beginning at 10:00 a.m. at the Greenbush Township Hall, the following Resolution was offered for adoption by Lake Board Member _____ and was seconded by Lake Board Member _____:

A RESOLUTION TO APPROVE THE CEDAR LAKE IMPROVEMENT BOARD 2026 ANNUAL BUDGET

WHEREAS, Section 30927 of Part 309 of Public Act 1994 (MCL 324.30927) requires that the Lake Board adopt an annual budget;

WHEREAS, the Uniform Budgeting and Accounting Act, Public Act 2 of 1968, as amended by Public Act 621 of 1978, requires that the Lake Board hold a public hearing prior to the adoption of the annual budget;

WHEREAS, the Lake Board has convened a public hearing on the proposed annual budget after the publication of notice as required by law; and

WHEREAS, the Lake Board has considered the proposed annual budget and any comments made at the public hearing related to the annual budget.

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Lake Board hereby adopts the Cedar Lake Improvement Board 2026 Annual Budget in the total amount of \$_____ (copy attached as Exhibit A) as its general appropriations act pursuant to the Uniform Budgeting and Accounting Act.
2. The Lake Board expenditures pursuant to the annual budget, the amendment of the budget, the transfer of funds thereunder and other matters pertaining to financial operations pursuant to the budget shall be subject to applicable provisions of the Uniform Budgeting and Accounting Act and other applicable law.
3. This resolution shall become effective upon signature.

The vote on the motion to adopt this Resolution was as follows:

YEAS: _____

NAYS: _____

ABSENT: _____

RESOLUTION DECLARED ADOPTED.

CERTIFICATION

I hereby certify that the above is a Resolution adopted by the Cedar Lake Improvement Board at the date and place stated above pursuant to the required statutory procedures.

Respectfully submitted,

Dated: December 12, 2025

By: Rex Vaughn

Its: Chairman

To: Rex Vaughn, Chairperson
Cedar Lake Improvement Board

Date: November 18, 2025

From: Mark Kieser, Senior Scientist
Kieser & Associates, LLC

cc: Project Files
www.cedarlakewmp.net

RE: Cedar Lake Nearshore and Tributary Monitoring to Assess Possible
Phosphorus Sources Stimulating Nuisance Algal Growths Near Jones Ditch

Background

Over the past two years of K&A aquatic vegetation monitoring on Cedar Lake, recurrent and persistent heavy growths of *Chara* (a calcareous macroalga species) and filamentous green algae have been observed in front of shoreline residences at K&A's LakeScan™ Aquatic Resource Observation Site (AROS) 358 (see Figure 1). This location lies just south of Jones Ditch along the northwestern shoreline of Cedar Lake. Dense growths of macrophytes are consistently noted at the mouth of, and just north of Jones Ditch at AROS 357 (see also Figure 1), though rarely at the level of filamentous green algae and *Chara* noted to the south of Jones Ditch. Aquatic applicator 2024 treatments in the vicinity of AROS 357 and 358 (Figure 2) did not appear to suppress these growths through last year's growing season. These growths remained heavy through the 2025 recreational season at nuisance levels. Soluble phosphorus was suspected to be driving the luxuriant levels of algae growth at AROS 358.

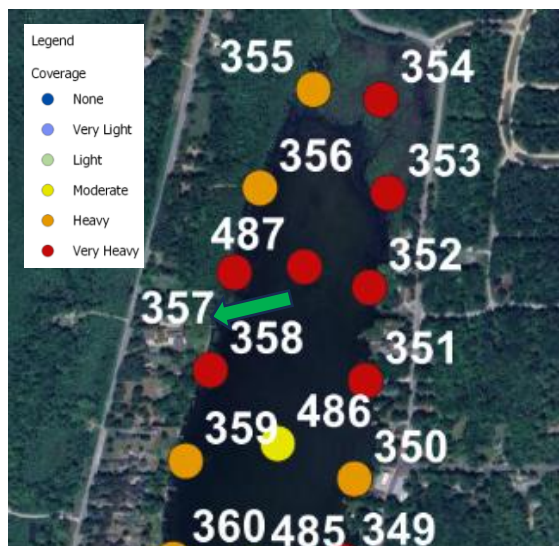


Figure 1. Aquatic Resource Observation Sites (AROS) map of the northern section of Cedar Lake with 3-D Density of aquatic macrophytes from August 27, 2025 LakeScan™ survey. Notable are densities in the vicinity of Jones Ditch (Green Arrow indicates mouth of Jones Ditch to the lake). AROS 357 begins at the mouth of the ditch extending northward; 358 starts just south of Jones Ditch.

in water quality monitoring. Conclusions and next steps follow a discussion of findings in this report.

2025 Water Quality Monitoring

July Preliminary Survey

A preliminary and very limited initial July 2, 2025 sampling was conducted at two locations in nearshore waters of AROS 358. Given the suspicion of possible septic system inputs in this locale, K&A collected samples for phosphorus and bacteria. The latter were processed using a field-screening test kit method to serve as an indicator of possible presence of *E. coli*, a gut-tract fecal coliform bacterium associated with waste from humans, mammals and some avian species. Field screening suggested the presence of *E. coli* and elevated levels of Total Coliform bacteria in July 2025 sampling.² (See Attachment A for the preliminary report on bacteria field screening results, photo observations of nearshore plant growths and preliminary data interpretations--SRP results were unavailable at the time of that reporting).

In contrast to the July field-screening bacterial observations, *E. coli* sampling at the Greenbush Township Park on Cedar Lake (conducted by the District Health Department No. 2 since 2006) reveals results typically at very low levels less than 10 MPN/100ml.³ (Notable, however, were some of the highest levels recorded by the Health Department on July 17, 2025 at this park with levels ranging from 82-105 MPN/100ml across four samples.) State standards suggest safe levels of exposure to *E. coli* are less than 300 CFU/100ml.⁴ July 2025 bacteria screening results by K&A at AROS 358 suggested the presence of *E. coli* along with total coliform bacteria levels above 1,000 MPN/100ml.⁵ These screening results therefore suggested the potential presence of human or animal organic waste in the two nearshore July samples from the northwestern shoreline. Septic system discharges were suspected and/or possible inputs from Jones Ditch.

As such, the CLIB board chairperson contacted the local home owners just south of Jones Ditch to inform them of preliminary screening results. Phone and in-person communications relayed the potential concerns with the suspected *E. coli* presence in shallow water in front of their homes. Homeowners expressed that they did not typically swim in the lake, nor did they allow

² Total Coliform is a broad group of bacteria found in the environment. *E. coli* is a specific type of coliform that is a strong indicator of recent fecal contamination. The presence of total coliform in surface waters may not be an immediate health concern, but its presence with *E. coli* suggests the presence of sewage and potential human health risks with the possible presence of harmful pathogens that can be found in human waste.

³ See: <https://www.egle.state.mi.us/beach/BeachDetail.aspx?BeachID=2456>

⁴ Part 31 of the Natural Resources and Environmental Protection Act, 1997 PA 451, as amended; R 323.1062(1) states: "All waters of the state protected for total body contact recreation shall not contain more than 130 *E. coli* per 100 ml, as a 30-day geometric mean...[or] contain more than a maximum of 300 *E. coli* per 100 ml." State of Michigan. (1994). "Natural Resources and Environmental Protection Act 451 of 1994. Accessible online: <<http://www.legislature.mi.gov/documents/mcl/pdf/mcl-act-451-of-1994.pdf>>.

⁵ MPN, or Most Probable Number is considered a screening level metric for Aquagenix samples, though this unit of measure is generally consistent with lab analyses that report *E. coli* as CFU, or Colony Forming Units/100 ml; Health Department #2 reports their results as MPN/100ml.

their pets to swim there either. They expressed full cooperation and agreed that the Board Chair and K&A should contact the District Health Department No. 2 about the preliminary bacterial screening findings.

Subsequent communications with District staff revealed an expressed caution on the meaning of screening results. Further communications with EGLE also stressed caution on the weight of evidence from preliminary sampling. Background research by the District on septic system ages at these locations, site visits and direct conversations with homeowners tended to lead discussions towards other possible sources such as water fowl. Requests for local District and/or state confirmatory sampling for bacterial presence in these nearshore areas were not accommodated. Consistent with reported preliminary findings in Attachment A, EGLE suggested additional sampling with water samples analyzed by a health department or commercial lab for bacteria in addition to phosphorus. No funding assistance was offered by the state in these regards.

Phosphorus data from July 2025, reported subsequent to bacterial screening results, also revealed relatively elevated levels of total phosphorus (TP) at 20 to 25 parts per billion (ppb) accompanied by soluble reactive phosphorus (SRP) levels at 4 to 7 ppb. (This is an update from previously reported information).⁶ (See Attachment B for a copy of the Great Lakes Environmental Center—GLEC lab report.) In contrast, voluntary monitoring data collected annually by Cedar Lake volunteers under the Clean Lakes Monitoring Program since 2002, reveal that TP data at Schmidt’s Point largely been less than 14 *ug/L* (with a May 2024 exception at 25 *ug/L*)⁷ further revealing that July 2025 TP results were elevated.

SRP is the soluble form of total phosphorus that is immediately available to stimulate algal growth when present in the water column. Phosphorus in lake sediments is what drives growth of rooted vascular plants (i.e., macrophytes). Notably, July 2025 nearshore TP data were well above historic lake data, and slightly higher than limited water sampling conducted in July 2024 on Jones Ditch in areas between West Cedar Lake Road and the lakeshore (i.e., 2024 Jones Ditch TP levels of 18 to 20 *ug/L*; 5 to 7 *ug/L* for SRP).⁸ July 2025 nearshore SRP concentrations were also

⁶ K&A originally relayed these TP levels to CLIB chairperson, Rex Vaughn by email, inadvertently citing these as SRP results from the July sampling. Incorrect SRP numbers supplied by K&A, were subsequently relayed to the District Health Department on July 18 by Rex Vaughn, which in turn, forwarded these to EGLE. Reporting herein presents actual SRP numbers; the formal lab report for both TP and SRP results from GLEC is included in Attachment B.

⁷ CEDAR LAKE (Alcona/Iosco Counties, MI), WATERSHED MANAGEMENT PLAN 2025 Update (FINAL DRAFT for EGLE Review). August 26, 2025, Figure 2-8, page 25. See: <https://img1.wsimg.com/blobby/go/a080ee0a-11db-41bd-8830-a064f9457faa/downloads/601aac28-b678-4f86-9e8f-3efb45870ccb/FINAL%20DRAFT%20Cedar%20Lake%20WMP%20for%20EGLE%20Review%208-2.pdf?ver=1756395098926>

⁸ CEDAR LAKE (Alcona/Iosco Counties, MI), WATERSHED MANAGEMENT PLAN 2025 Update (FINAL DRAFT for EGLE Review). August 26, 2025, page 61. See: <https://img1.wsimg.com/blobby/go/a080ee0a-11db-41bd-8830-a064f9457faa/downloads/601aac28-b678-4f86-9e8f-3efb45870ccb/FINAL%20DRAFT%20Cedar%20Lake%20WMP%20for%20EGLE%20Review%208-2.pdf?ver=1756395098926>

elevated above expected in-lake levels that are typically found at levels $\leq 1.5 \text{ ug/L}$. Levels above 1.5 ug/L are known to stimulate algal growth.

August Expanded Sampling

Based on preliminary findings from the limited July 2025 lake sampling event, subsequent collection of multiple samples for phosphorus and bacteria across the area was deemed appropriate. This focused on a more detailed characterization of site conditions that could be driving excessive algal and plant growth. Septic leachate, as well as native animal populations frequenting streams and wetlands of Jones Ditch, can also add bacteria to the lake. Thus, potential nearshore bacterial contamination also merited broader sampling of Jones Ditch and nearshore areas. Attachment C of this memorandum outlines the scope for this effort. Figure 3 shows locations that were proposed for this extended sampling in relation to the surrounding AROS.

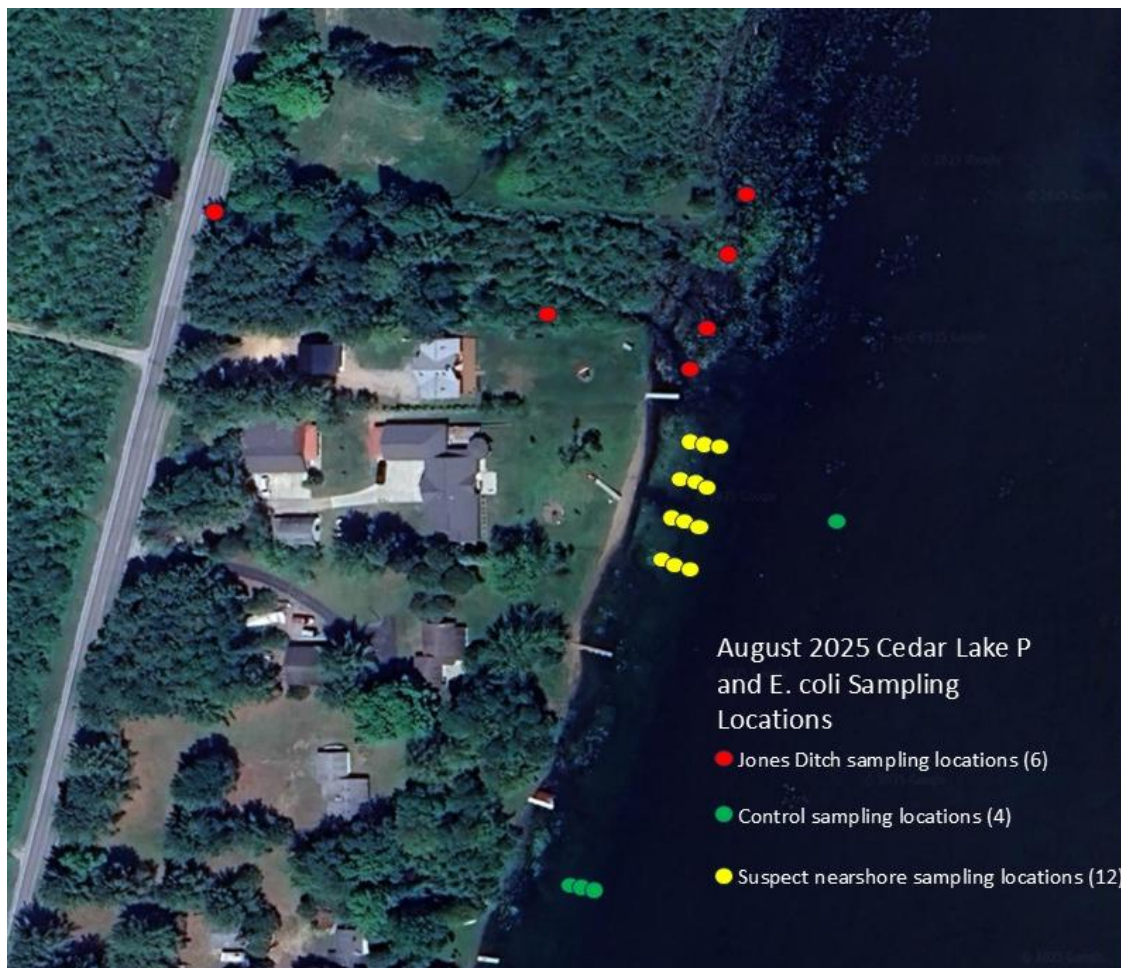


Figure 3. Proposed water quality sampling locations for August 2025 sampling.

Sampling locations were selected to target: 1) Jones Ditch and areas along the shoreline from the mouth of the Ditch extending to the north (AROS 357); 2) four nearshore transect locations (with

three samples each) starting near the water's edge extending lakeward from the shoreline area with suspect septic system discharges and heavy algal growth (AROS 358), and; 3) two locations serving as controls (three nearshore samples south of the suspect septic system discharge area—AROS 359, and one approximately 150 feet from the shoreline at AROS 358).

Nearshore and Jones Ditch water quality samples were retrieved by K&A staff from the shoreline by extending either a 6 or 12-foot length sampling rod to the point of sample collection. Clean 500 ml polypropylene sampling bottles were used for each location for sample collection. Shoreline samples for Transects 1-4 at the water's edge ("0 feet") and at "15 feet" from the shore were retrieved starting at the shoreline moving lakeward. The "30 feet" sample for Transects 1-4 was retrieved by boat due to heavy muck conditions precluding wading access. Transect 1 samples were collected from an existing dock. Samples in front of Jones Ditch were collected by boat using the sampling rod with sampling locations each being approximately 15 feet from the shoreline (where the precise shoreline edge was largely obscured by nearshore emergent wetland vegetation).

At the southern nearshore control area, samples were retrieved by boat with lakeward to shoreward collection using the extended sampler rod. The open lake control was also collected from the boat. Extending the sampling rod to the point of collection avoided water, plant and sediment disturbance. GPS coordinates were collected from each location after sample collection.

From the 500 ml of collected sample, aliquots were transferred to smaller, clean sampling containers provided by the commercial labs. Approximately 25-40 ml of raw water sample were filtered at each location for SRP analysis using a 0.45 μ filter. Approximately 100 ml of the collection container were placed in acidified sample containers for TP. Containers for each bacterial sample (filled from the 500 ml collection bottle) were immediately transported in a cooler on ice to the local lab is Oscoda for bacterial analysis. These followed processing procedures for state of Michigan protocols for *E. coli* and Total Coliform Bacteria collection and analysis. A chain-of-custody accompanied bacterial samples for lab delivery by Rex Vaughn of the CLIB shortly after K&A collection while K&A staff remained on-site to process remaining phosphorus samples.

Phosphorus samples were placed on ice in coolers following collection. SRP samples were frozen upon return to the K&A office in Kalamazoo on August 27th. Phosphorus sample delivery to GLEC labs by K&A was accompanied by a Chain-of-Custody form. Field data for dissolved oxygen (DO) and temperature were measured *in situ* with a YSI ProDO meter and probe at the open lake control station and select Jones Ditch locations. Conductivity and pH and were measured from remaining volumes in the original 500 ml containers for each sample in the field using field instrumentation.

August Survey Results

This section of the memorandum presents survey conditions and water quality monitoring results from the expanded sampling conducted concurrently with K&A's late-season LakeScan™ survey on August 27, 2025.

Survey Weather Conditions

Weather leading up to the time of the August 27, 2025 sampling was generally windy. Wind data were obtained from the Cedar Lake Tempest Weather Station website (with equipment situated on the northeast shoreline of Cedar Lake). Table 1 shows modest maximum wind speeds from the east several days prior to the August 27th nearshore sampling (i.e., August 18-21, 2025). East winds would tend to move open lake water into these northwestern shoreline areas mixing with nearshore waters. Generally higher maximum wind speeds with a westerly component were observed for at least four days (August 23-26) leading up to the sampling date. Such winds might tend to move water out of the sampled nearshore areas, though with a wind shadow effect from the shoreline, nearshore waters may have remained relatively undisturbed. This might tend to limit water circulation and mixing in the nearshore zone that was sampled.

During sampling conducted on August 27th, weather throughout the day was mostly sunny with temperatures around 70°F with gentle southwesterly winds around 5-10 mph. Water surfaces were generally calm during the time of nearshore sampling.

Table 1. Wind speeds and direction on Cedar Lake prior to and including August 27, 2025 water quality monitoring.

Date	Maximum Wind (mph)	Wind Direction
8/18/2025	6.2	E
8/19/2025	7	E
8/20/2025	7.9	ESE
8/21/2025	6.8	NE
8/22/2025	9.7	SW
8/23/2025	19.4	WSW
8/24/2025	17.6	W
8/25/2025	18.2	W
8/26/2025	16.6	WNW
8/27/2025	12.6	W

Vegetation Observations

From K&A's 2025 lake-wide vegetation surveys on Cedar Lake, observations of plant growths at and adjacent to the monitoring areas (using the LakeScan™ methodology) revealed the following (refer to Figure 1 for the locations cited):

Early-season Survey (July 2, 2025):

- 3D-density values (a function of observed vegetation coverage and their associated height in the water column) at AROS 358 during the July 2nd sampling event, were over double the values recorded immediately south at AROS 359 and nearly 5 times higher than lakeward observations at AROS 486. These observations indicated a high level of plant density in the area in comparison to surrounding observation areas.
- Coverage estimations at AROS 358 during the July 2nd sampling event were over double the values recorded immediately south at AROS 359 and nearly 5 times higher than lakeward observations at AROS 486. These observations indicated a high level of plant coverage in the area in comparison to surrounding observation areas.

Late-season Survey (August 27, 2025):

- 3D-density values at AROS 357 (at the mouth of Jones ditch) during the August 27th sampling event, were 65% greater than the values recorded at the control transect at AROS 359 to the south. These observations indicated a high level of plant density in the area in comparison to surrounding observation areas.
- Coverage estimations at AROS 357 during the August 27th sampling event were 7.5% greater than the values recorded at the control transect AROS 359. These observations indicated a high level of plant coverage in the area in comparison to surrounding observation areas.

Vegetation survey data tend to confirm that the luxuriant *Chara* growths observed off the shoreline residences at AROS 358 and heavy plant growth at AROS 357 were substantially higher than other nearby and/or lake-wide observation areas. These suggest unique phosphorus loading conditions in this area of concern.

Jones Ditch Water Flows/Phosphorus Load

Jones Ditch flows measured by K&A with a Marsh-McBirney Model 5000 Flow Meter at the West Cedar Lake Road culvert were quite low, averaging 25 gallons/minute (or 0.056 cubic feet/second--cfs) on August 27, 2025. This is a typical, very low flow condition in Jones Ditch at this time of the summer. Spring flows in 2024, for example, ranged from about 5-35 cfs from March-June; where August flows ranged from 0-2.5 cfs last year.⁹ Using flow and measured concentration of SRP at 4.4 ug/L on August 27, 2025 at the “Jones Bridge” sampling location, a daily load of 0.0014 lbs of SRP/day was calculated for the period of sampling.

⁹ K&A, 2025. “Findings for 2024 Cedar Lake Groundwater/Surface Water Level Monitoring.” Technical Memorandum from K&A to the Cedar Lake Improvement Board, April 4, 2025. (See Figure 26; <https://img1.wsimg.com/blobby/go/a080ee0a-11db-41bd-8830-a064f9457faa/downloads/0ae7645d-b22c-455e-b9b0-b0cce513ac88/Final%20K%26A%202024%20Cedar%20Lake%20Hydrology%20Report%204-4.pdf?ver=1756395098605>).

Water Quality Results

Water quality sample collection occurred at 22 stations for TP, SRP, *E. coli* and Total Coliform bacteria on August 27, 2025 in conjunction with the late-season LakeScan™ survey of aquatic vegetation across the lake. Phosphorus analyses were conducted by the Great Lakes Environmental Center (GLEC) in Traverse City, Michigan while bacterial samples were analyzed on the date of collection by Enviro Lab Services of Oscoda, MI. Table 2 summarizes all field data and lab results for water quality samples. Attachment D includes copies of all lab reports.

Discussion

This section focuses on the analysis Cedar Lake phosphorus and bacterial sampling results from the August 27th sampling. This sampling provided a much more comprehensive view of water quality conditions over those first observed with limited collection of two nearshore samples on July 2, 2025 in the nearshore area of heavy algal growths. Data from Table 2 are mapped in Figures 4-7 to project spatial conditions at the time of sampling. A discussion is provided accordingly for TP, SRP, *E. coli* and Total Coliform Bacteria. Additional statistical analyses for SRP data are provided in Attachment E, along with nearshore mass balance phosphorus modeling in Attachment F.

Total Phosphorus

Figure 4 portrays all TP data from the August sampling where they were collected. The inset is an enlargement of results specific to the suspect shoreline area. The highest TP concentration noted was the open lake control at 40.8 $\mu\text{g/L}$. This was not expected, and contrasts with typically low TP levels cited earlier from Cedar Lake CLMP sampling at 14 $\mu\text{g/L}$. A cluster of higher TP concentrations appears at Jones Ditch, around the mouth of the ditch and to the north. Nearshore suspect areas to the immediate south of the ditch were generally lower than levels around the ditch. The southern nearshore control area had TP concentrations similar to the range noted in the nearshore suspect area.

Notable along residential shoreline areas was the localized variability in TP concentrations compared to those around the ditch that were quite consistent. This initially suggests that Jones ditch flows could be creating ubiquitous conditions where it enters the lake amidst rooted macrophytes dominating the shoreline, at least during the time of August sampling.

Table 2. Field and laboratory results for August 27, 2025 water quality monitoring.

Location	Feet from Shoreline	Label	In-field						Enviro Lab Services		GLEC		SRP:TP Ratio
			Latitude	Longitude	DO mg/L	Temp °C	pH sU	Conductivity μS/cm	E. Coli CFU/100 mL	Total Coliform CFU/100 mL	TP μg/L	SRP μg/L	
Jones	--	Jones Culvert Upstream	44.55946707	-83.32935484	8.35	11.1	8.02	474	40	3,440	31.2	7.7	25%
	--	Jones Bridge	44.55939846	-83.32846465	9.06	12.1	7.95	451	40	4,460	39.2	4.5	11%
	--	Jones Confluence	44.55933705	-83.32760656	--	--	7.61	366	60	5,080	33.2	4	12%
	15	Jones North Wetland 1	44.55988129	-83.32741425	--	--	7.99	257	220	9,000	34.8	3.7	11%
	15	Jones North Wetland 2	44.55957636	-83.32746029	--	--	8	250	180	9,020	35.4	2.8	8%
15	Jones South Wetland	44.55916599	-83.32763662	--	--	7.72	446	380	6,560	33.5	6.8	20%	
Suspect Nearshore	0	Transect 1 - Shoreline	44.55903782	-83.32774866	--	--	8.03	256	40	8,100	22.5	3.2	14%
	15	Transect 1 - 15 ft	44.55903825	-83.32769076	--	--	8.64	236	20	3,580	23.4	3.6	15%
	30	Transect 1 - 30 ft	44.55903524	-83.32763166	--	--	8.03	267	200	6,240	21.6	3.6	17%
	0	Transect 2 - Shoreline	44.55892588	-83.32774711	--	--	8.45	241	-	2,440	21.3	3.1	15%
	15	Transect 2 - 15 ft	44.55892261	-83.32769234	--	--	8.37	252	-	2,600	28.2	2.7	10%
	30	Transect 2 - 30 ft	44.558919	-83.32763583	--	--	8.27	246	100	4,120	17.9	2.9	16%
	0	Transect 3 - Shoreline	44.55881732	-83.3277693	--	--	8.29	246	-	4,240	22.7	2.1	9%
	15	Transect 3 - 15 ft	44.55881527	-83.32771771	--	--	8.39	245	20	1,960	23	2.6	11%
	30	Transect 3 - 30 ft	44.55880172	-83.3276644	--	--	8.46	242	20	2,640	33.3	2.7	8%
	0	Transect 4 - Shoreline	44.55869758	-83.32781195	--	--	8.49	251	60	3,800	19.6	1.8	9%
15	Transect 4 - 15 ft	44.55869184	-83.32775357	--	--	8.48	240	20	3,680	19.6	1.6	8%	
30	Transect 4 - 30 ft	44.55868295	-83.3276964	--	--	8.5	243	20	1,280	34.6	3.3	10%	
Control	0	Control - Shoreline	44.55763041	-83.32832171	--	--	8.8	239	60	2,360	32.7	1.7	5%
	15	Control - 15 ft	44.557615	-83.32825215	--	--	8.47	234	60	2,160	26.5	1.6	6%
	30	Control - 30 ft	44.55760622	-83.32819592	--	--	8.44	235	60	2,220	20.3	2	10%
	150	Control - In Lake	44.55863641	-83.32723883	9.59	17.6	8.56	255	40	1,220	40.8	3.4	8%

This ubiquitous distribution of TP is not noted along residential shorelines. In the suspect area with dense algal growth, sampling within the matrix of *Chara* and filamentous green algae may be a reason for varying concentrations ranging from 17.9-34.6 ug/L over this small area. Shorelines with limited algal or plant growth will tend to have similar levels where there is no localized source of phosphorus and circulation evenly mixes ambient lake water. Those with dense growths observed along the suspect shoreline area, may impede nearshore circulation. Add possible localized phosphorus sources (Jones Ditch and/or septic systems), such variation in TP concentrations over a limited area might not be unexpected. There is no decisive explanation of higher TP concentrations near the shoreline of the southern control location, diminishing as these move lakeward, other than a possible onshore localized source.

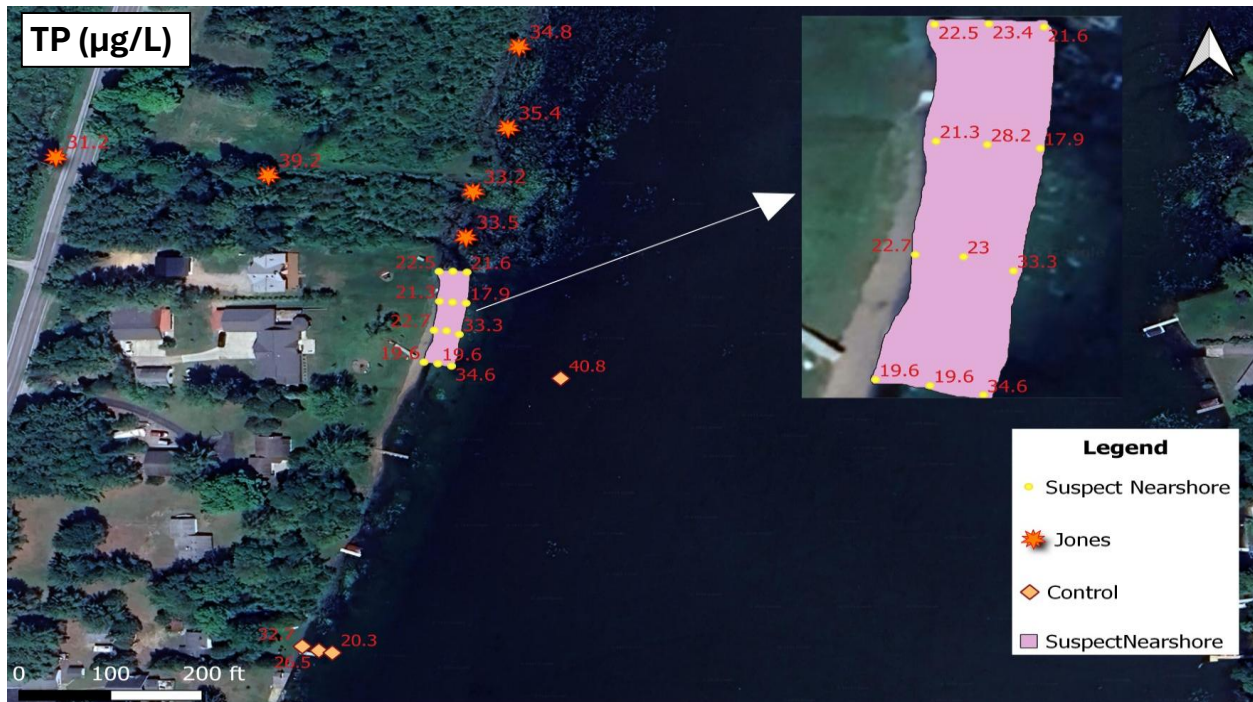


Figure 4. Total Phosphorus results by sampling station for the August 27, 2025 monitoring.

Soluble Reactive Phosphorus

Figure 5 displays SRP concentrations from the August 2025 sampling. Soluble phosphorus (measured as SRP) and particulate phosphorus are the predominant forms of this nutrient measured by a TP analysis. In unproductive (‘clean’) lakes, the soluble fraction of P is often very low to non-detectable as it is readily taken up by phytoplankton and algae for their growth. These low levels of soluble phosphorus often make it the ‘limiting nutrient’ for plant and algal growth. Where soluble phosphorus is elevated, it can especially stimulate nuisance algal growth. Its elevated presence in a lake suggests an external (streams, septic systems) or internal (sediment) source. As such, analysis of possible SRP sources is of primary concern.

Levels present in nearshore areas noted in Figure 5 suggest a local source, especially in and around Jones Ditch, as well as possibly the suspect shoreline area. Some of the lowest levels

observed on August 27th were found at the southern nearshore control location. Within the suspect nearshore area, averaged SRP results by transect suggest higher average concentrations in closest proximity to Jones Ditch which decrease moving to the south.

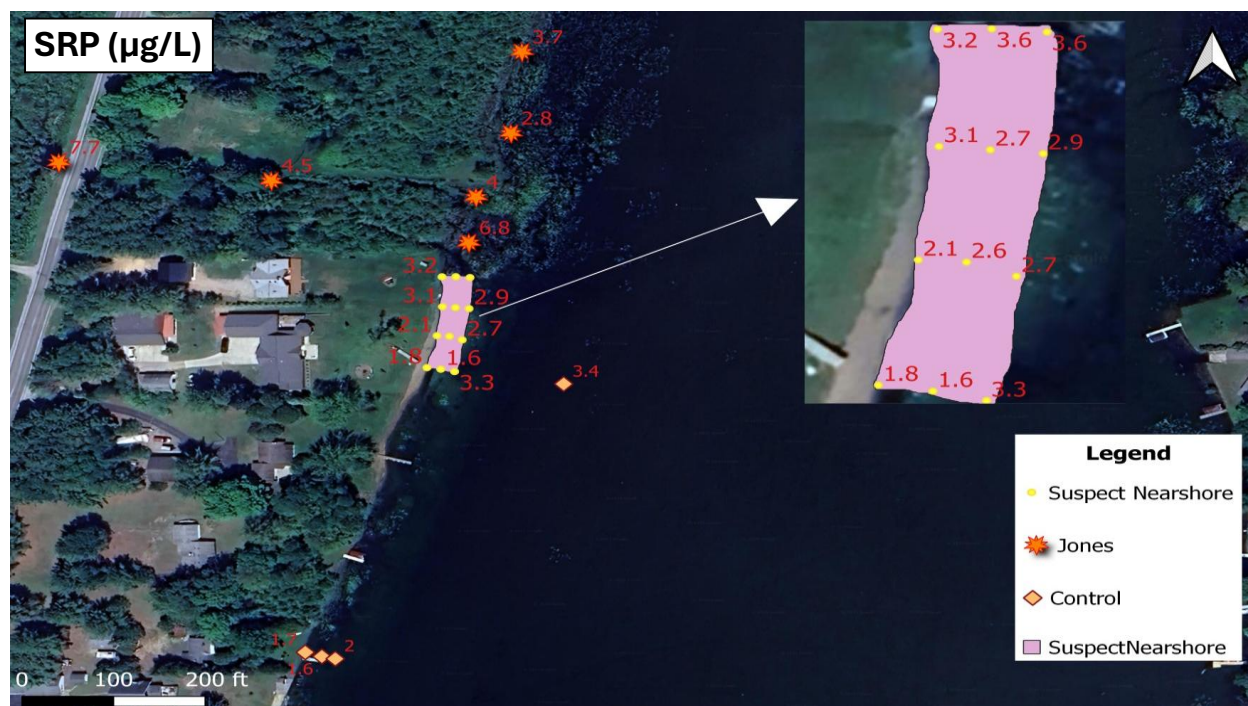


Figure 5. Soluble Reactive Phosphorus results by sampling station for the August 27, 2025 monitoring.

Included in Table 2 were SRP to TP ratios. The higher this ratio is in surface waters, the greater potential there is for a specific SRP source (e.g., human or animal waste). On average, this ratio was highest for Jones Ditch samples (15%), followed by an average of 12% for suspect nearshore areas and 7% for the average of all 4 control samples. Notably, filamentous algae and *Chara* in the suspect nearshore area will utilize dissolved phosphorus in the water column while established aquatic macrophytes that are more predominant off of Jones Ditch, will draw in phosphorus from sediments. These physiological conditions could affect these ratios as uptake of available SRP in the water column will be greater in the areas of algal growth. This effectively can lower localized SRP concentrations in the water column. This would have the effect of lowering the SRP/TP ratio in the suspect area, confounding the use of the ratio to assert the presence of a local soluble phosphorus source.

Statistical analyses of the SRP data were therefore performed to further assess possible source indicators (Attachment E). A series of tests show that there are no statistically significant differences in sampling data between nearshore zones to the south versus to the north of the Jones Ditch confluent. Through there is an apparent trend of decreasing SRP concentrations moving away from Jones Ditch to the south (based on transect data averages), a range of statistical analyses suggest these northern areas are affected by Jones Ditch and other possible localized SRP sources. There is a statistically significant difference between control site data to

the south and these affected areas. This suggests possible sources are localized to the vicinity of Jones Ditch.

A simplified mass balance loading analysis of SRP from Jones Ditch into nearshore waters was additionally performed to assess whether the ditch contributions were sufficient to generate the levels of measured nearshore phosphorus concentrations (Attachment F). Considering a range of circulation patterns with open lake water exchanges that might flush suspect nearshore areas, modeling suggests there is insufficient Jones Ditch discharges to generate measured SRP levels in proximal nearshore areas. This suggests other sources of SRP discharging to these nearshore areas, the primary suspects being septic systems.

Bacteria (*E. coli* and Total Coliform)

Though SRP was a primary focus for August sampling related to nuisance nearshore algal growth, sampling for bacterial presence in nearshore waters is an important secondary consideration, especially if phosphorus sources are septic systems. Gut-tract bacteria measured by *E. coli* and Total Coliform bacteria are strong indicators of human or animal waste in surface waters. For the nearshore areas at and near Jones Ditch, the presence of these bacteria can indicate organic waste sources in Jones Ditch, or from shoreline septic systems.

Sampling results show that *E. coli* and Total Coliform bacteria are broadly distributed throughout the areas sampled (Figures 6 and 7, respectively). This includes at control locations. *E. coli* was detected at levels ranging from non-detect to 380 CFU/100ml across all samples collected on August 27th. All *E. coli* detections were generally higher than what has typically been observed at the Greenbush Township public beach. One sample at the ‘southern wetland’ location just off the mouth of Jones Ditch exceeded the state standard for full body contact of 300 CFU/100ml. The highest *E. coli* detections appeared to be clustered near the mouth of Jones Ditch and to the north (Figure 6). Notable were the ubiquitous measures of *E. coli* at 60 CFU/100ml in the nearshore control area. Their presence here might suggest a localized source such as a septic system discharge, though SRP data at this control location do not necessarily affirm such an inference.

Total Coliform bacteria (Figure 7) were detected at all 22 sampling locations ranging from 1,220 CFU/100ml at the southern nearshore control site to 9,020 CFU/100ml in nearshore areas just north of Jones Ditch. At the time of sampling, *E. coli* and Total Coliform levels measured at Jones Ditch locations upstream of shoreline areas were below comparable measurements at a number of proximal nearshore locations. The presence of bacteria in Jones Ditch suggests an upstream source, possibly of animal origin given the lack of upstream human development but persistent beaver activity at West Cedar Lake Road and near the mouth of the ditch. Of note, *E. coli* levels in the ditch (40 CFU/100ml) were also lower than those found at the southern control site (60 CFU/100ml). Collectively, these data suggest there may be multiple sources of bacteria to these nearshore waters. These data also affirm July 2025 screening levels detecting the presence of *E. coli* along with Total Coliform levels above 1,000 MPN/100ml in the suspect nearshore area.

Conclusions

Sampling results from July and August monitoring of nearshore areas of Cedar Lake in the vicinity of Jones Ditch suggest there are likely multiple sources of soluble phosphorus and bacteria to these areas including both the ditch and possibly septic systems. Nearshore averages of SRP transect data revealed the lowest concentrations at the southern control location (1.8 ug/L) compared to those for the suspect nearshore area (ranging from 2.2-3.5 ug/L on average). Nearshore SRP concentrations at, and north of Jones Ditch ranged from 2.8-6.8 ug/L. Statistically, SRP levels in the suspect nearshore area and Jones Ditch shoreline are distinctly higher than the sampled control zone. This suggests that localized phosphorus sources are the cause of the luxuriant algal growths observed in nearshore areas just south of the Jones Ditch confluence with the lake. Such sources are also likely responsible for the high levels of SRP (3.4 ug/L) and TP (40.8 ug/L) noted 150 feet off the shoreline in front of the suspect nearshore zone.

Levels of bacteria measured in nearshore areas of this northwest shoreline may originate from septic systems that discharge to the lake here. Higher nearshore levels suggest sources near the lakeshore. There also appear to be bacterial sources in Jones Ditch, though not at the levels noted at nearshore locations. With beaver activity at the mouth of the Ditch and upstream at the West Cedar Lake Road culvert, animal sources could be contributing source to these observations. Heavy algal growth at the shoreline in the suspect areas along with elevated SRP levels and the presence of *E. coli* point to possible septic system discharges.

Robust CLIB monitoring of nearshore groundwater conditions at Cedar Lake since 2005 have demonstrated that shallow groundwater along the northwest shoreline of Cedar Lake discharges to the lake. In Alcona County, residential properties along this northwest shoreline are unsewered, with all having septic systems that ultimately discharge to shallow groundwater. As such, it is not unexpected that both soluble phosphorus and bacteria could be moving to the lakeshore. Data and analysis of 2025 monitoring suggests this could be the case, along with discharges from Jones Ditch.

Next Steps

Though monitoring indicates water quality concerns associated with elevated phosphorus and bacterial levels, additional strategic sampling of shallow groundwater and bacterial source tracking are necessary to conclusively pinpoint localized sources. Source identification is a critical next step to determine what, if any remedial strategies could be effectively implemented to address these water quality concerns.

Two monitoring strategies will fill these gaps. Shallow groundwater sampling along the shoreline of the suspect septic system locations will indicate discharges to the lake if SRP and *E. coli* are detected. If *E. coli* is found in shallow groundwater, additional samples will later be collected for microbial source tracking to refute animal contribution sources as speculated by the District Health Department based on July 2nd bacterial screening results. Similar source tracking for

Jones Ditch will be simultaneously conducted to determine if bacteria are of human or animal origins.

During an October 10, 2025 Cedar Lake Improvement Board meeting, K&A was authorized to initiate this additional sampling. As such, near-term monitoring will include shallow groundwater sampling along suspect shorelines at up to seven locations (six in front of the two existing homes and one at the lake shoreline in close proximity to the former septic system at the CLIB Jones Ditch property). Samples will be tested for SRP, *E. coli* and Total Coliform bacteria. Microbial source tracking for DNA analysis will occur at a later date when there is flow in Jones Ditch.

Once sources of SRP and *E. coli* are confirmed, next steps would be two-fold: 1) additional water quality sampling from several northwest shoreline areas in Alcona County, and; 2) consideration of source mitigation options for the Jones Ditch locale. Shoreline monitoring was envisioned in the 2025 Cedar Lake Watershed Management Plan Update as were education efforts for septic system maintenance. Addressing Jones Ditch bacterial sourcing can be overlain with anticipated stream restoration improvements expected to unfold with the recently approved Midwest Glacial Lakes Partnership grant to the CLIB.

ATTACHMENT A

July 14, 2025 K&A Technical Memorandum on July 2, 2025
Nearshore Sampling

To: Rex Vaughn, Chair
Cedar Lake Improvement Board

Date: July 14, 2025

From: Mark S. Kieser
Senior Scientist, K&A

cc: Natalie Crum, K&A

RE: **Summary of July 2, 2025 Water Quality Sampling of Select Nearshore Areas of Cedar Lake with Preliminary Discussion of Field Screening for *E. coli* Bacteria**

Overview

On Wednesday, July 2, 2025, Kieser & Associates, LLC (K&A) collected a limited number of water quality samples from select nearshore locations along the northwest shoreline of Cedar Lake in Alcona County. This sampling occurred during K&A's routine vegetation monitoring of the lake. Nearshore water quality samples for soluble reactive phosphorus (SRP) were collected in front of two residential properties situated directly south of Jones Ditch. Water samples were also screened for the potential presence of *E. coli*, a common gut-tract bacterium associated with fecal wastes from mammals and avian species.

Phosphorus is the primary nutrient of concern that may be released for septic system drain fields near lake shorelines. These discharges can lead to excessive nearshore weed and algae growths. In select instances, phosphorus discharges can be directly related to Harmful Algal Blooms whereby blue-green algae proliferate at the lake surface forming noxious slicks or scum. Some blue-green algal species can also form toxins into surface waters.

The presence of *E. coli* in surface waters can be an indicator of sewage from septic system discharges, or animal waste contamination from resident waterfowl near the shoreline (such as geese or ducks). Human health concerns relate to the possible presence of viral pathogens associated with human waste that can cause diseases through ingestion or skin contact such as gastroenteritis (diarrhea), giardia, hepatitis or cholera. The State of Michigan has established water quality standards for total body contact (e.g., swimming) at a Daily Maximum Geometric Mean at 300 *E. coli* counts per 100 milliliters (ml).

Residential properties along northern Cedar Lake shorelines in Alcona County are serviced by private septic systems. Long-term groundwater monitoring of these areas by K&A has consistently shown that shallow groundwater along its western shoreline discharges directly to the lake. Groundwater along the eastern shoreline discharges east towards Lake Huron. As such, septic system discharges to Cedar Lake via shallow groundwater will only be found along the northwestern shorelines where there are residential properties.

Sampling Conditions on July 2, 2025

K&A sample collection occurred under partly cloudy conditions with temperatures reaching 84°F. Winds ranging from 6 to 15 mph from the northwest resulted in calm conditions in this sampled section of the Cedar Lake shoreline. (Refer to Attachment A of this memo for site photos taken at the time of sample collection.) Two water quality samples were collected at locations shown in Figure 1 by submersing and then inverting 250ml wide-mouth plastic sample containers to capture water from below the lake surface. Water samples were collected amongst dense growths of *Chara* sp. and filamentous green algae. Site 1 (S1) was located approximately 35 ft from the shoreline while Site 2 (S2) was located approximately 16.5 ft from the shoreline. The depth near each site was approximately 2-3 feet.



Figure 1. Water quality sampling locations on July 2, 2025.

This sampling occurred within Aquatic Resource Observation Site (AROS) 358 (refer to Figure 2). AROS locations have been monitored for aquatic vegetation by the K&A team for almost two decades on Cedar Lake using the LakeScan™ survey methodology. Native vegetation located within this AROS during the July 2 survey included the calcareous macroalgae, *Chara*, and vascular macrophytes including Sago Pondweed (*Stuckenia pectinata*), Variable Pondweed (*Potamogeton graminus*), Broadleaf Pondweed (*Potamogeton amplifolius*), Variable Watermilfoil (*Myriophyllum heterophyllum*), Waterlily (*Nymphaea* sp.), Spatterdock (*Nuphar* sp.), Rush (*Juncus pelocarpus*) and Cattail (*Typha* sp.). Mixed in amongst the *Chara* and vascular plants were notable growths of filamentous green algae. Though not observed in July 2025, the invasive hybrid Eurasian watermilfoil was previously observed at this location prompting past chemical treatments in this area. Observed plants at this location this year appeared at high densities; a consistent observation over the years despite periodic chemical

treatments intended to suppress such luxuriant growth. Such aquatic vegetation at other locations along the northwest was not observed at the densities seen at AROS 358.



Figure 2. Aquatic Resource Observation Sites (AROS) map of the northern section of Cedar Lake.

Preliminary Results

SRP samples have been submitted to the Great Lakes Environmental Center (GLEC) laboratory in Traverse City, MI. Analytical results should be reported by GLEC before the end of July. The luxuriant growth observed in the sampling area (particularly the level of filamentous green algae) suggests a higher level of soluble phosphorus here than is likely present in other observed shoreline areas with little to no algae and lower plant densities. In anticipation of July 2 testing results, K&A will compare reported lab data against nearby Jones Ditch phosphorus sampling in 2024.

Water quality screening for *E. coli* bacteria at these July 2025 Cedar Lake sampling locations revealed very unsafe levels of total coliforms, indicating a significant potential for fecal contamination (Table 1). The total coliform levels at each site are considered very unsafe by the US EPA’s recreational water health risk criteria, especially with screening tests revealing the presence of *E. coli*.

Table 1. *E. coli* and Total Coliform sample results.

Site	<i>E. coli</i>	Total Coliform Count (MPN)	Upper 95% Confidence Level/100 mL	EPA Recreational Water Health Risk Category
1	Positive	>1000 MPN / 100 mL	94351	Very Unsafe
2	Positive	>1000 MPN / 100 mL	94351	Very Unsafe

The field screening method used to test for the presence of *E. coli* and the broader class of coliform bacteria involved the use of an Aquagenx® CBT EC+TC (Compartment Bag Test), “Most Probable Number” (MPN) Kit.^{1,2} This is not an EPA-approved method for typical health department analyses (where sample hold times are only 6 hours between collection and lab analysis). It is intended to provide a semi-quantitative indication of the presence of these bacteria.

Total coliform counts shown in Table 1 for both sampling locations indicate a concerning level of these bacteria. In the summer season, the state of Michigan *E. coli* standards for a daily maximum geometric mean (calculated from three separate sampling locations at a site) are 300 counts/100ml of sample. When these levels are found at public beaches by county health departments, beaches are closed to swimming. The >1,000 counts/100 ml (up to a possible maximum of 94,351 counts/100ml), suggest bathers should avoid these areas, and that further laboratory sample testing should be conducted to confirm or refute concerns with full body contact. (Attachment B provides documentation of field kit screening results; Attachment C provides a summary of field kit results with semi-quantitative interpretation of bacterial counts.)

¹ See: <https://www.aquagenx.com/wp-content/uploads/2025/06/1-10-Dilution-Instructions-CBT-ECTC-MPN-202506.pdf>

² See also: https://www.aquagenx.com/wp-content/uploads/2021/06/Basis-of-Aquagenx-MPN-Table_June2021-.pdf

Implications

Comparable 2024 sampling for phosphorus (but not bacteria) in Jones Ditch to the north of 2025 nearshore sample locations revealed concentrations of <7 parts per billion of SRP. These are very low levels of phosphorus, and common for northern Michigan streams in undeveloped areas. Low levels are also consistent with past water quality testing in Cedar Lake. Any elevated SRP levels found at S1 or S2 over the Jones Ditch concentration will suggest a localized source of phosphorus. With no other indications of diffuse pollution inputs, septic system discharges would be a likely possible source of elevated phosphorus.

With the levels of bacteria observed through field-testing, septic leachate would also be the suspected source based on K&A research of other northern Michigan lakes over the past decades. Thus, additional testing should be performed at this nearshore location. K&A recommends this testing be conducted by the county health department which could also assist residents with recommendations for additional inspections of existing septic system performance.

The high total coliform levels and presence of *E. coli* suggest a significant potential for fecal contamination and the associated health risks in this section of Cedar Lake. These findings present a public health concern, as fecal contamination is associated with various waterborne illnesses which disproportionately impact children younger than 5, adults 65 and older, as well as people with weakened immune systems (U.S. Centers for Disease Control and Prevention).³ As such, county health department testing should also include additional sampling to the north and south of these particular nearshore areas.

Of note, research indicates that *Cladophora*, a genus of filamentous green algae, can serve as a secondary habitat for *E. coli* in surface waters. Filamentous algae reduce many of the environmental stressors that affect survivability of *E. coli* bacteria upon introduction to an aquatic environment. This algal species can provide sites for adherence, elevated nutrient concentrations and protection from UV radiation (Beckinghausen et al. 2014, Brettar and Höfle 1992, Byappanahalli et al. 2003, Whitman et al. 2003). Studies show variable survival time of *E. coli* on *Cladophora*, with the longest length recorded being more than 48 days (Engelbert et al. 2008). This suggests that *Cladophora* mats can harbor naturalized strains of *E. coli*, not only allowing *E. coli* to persist, but to also successfully grow (Badgley et al. 2011, Byappanahalli et al. 2007).

³ Centers for Disease Control and Prevention. (n.d.). *Risk and E. coli infection*. Centers for Disease Control and Prevention. <https://www.cdc.gov/ecoli/risk-factors/index.html#:~:text=Some%20groups%20of%20people%20are,immune%20systems%2C%20and%20international%20travelers.>

Many filamentous green algae exhibit similar growth habits and are morphologically similar to *Cladophora* (John and Rindi 2015). Because of these similarities, it is possible that the prolific filamentous green algae growths observed at Site 1 and 2 may also act as a secondary habitat for *E. coli*, prolonging its presence in this area. As a substantial source of soluble phosphorus is required for the observed algal growth, these conditions lead K&A to believe that septic system leachate could be the primary reason for observed conditions.

References

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Attachment A

Field Photos of Site Conditions

Photos of the excessive growth of *Chara sp.* and filamentous algae near the sampling locations, taken on July 2, 2025.







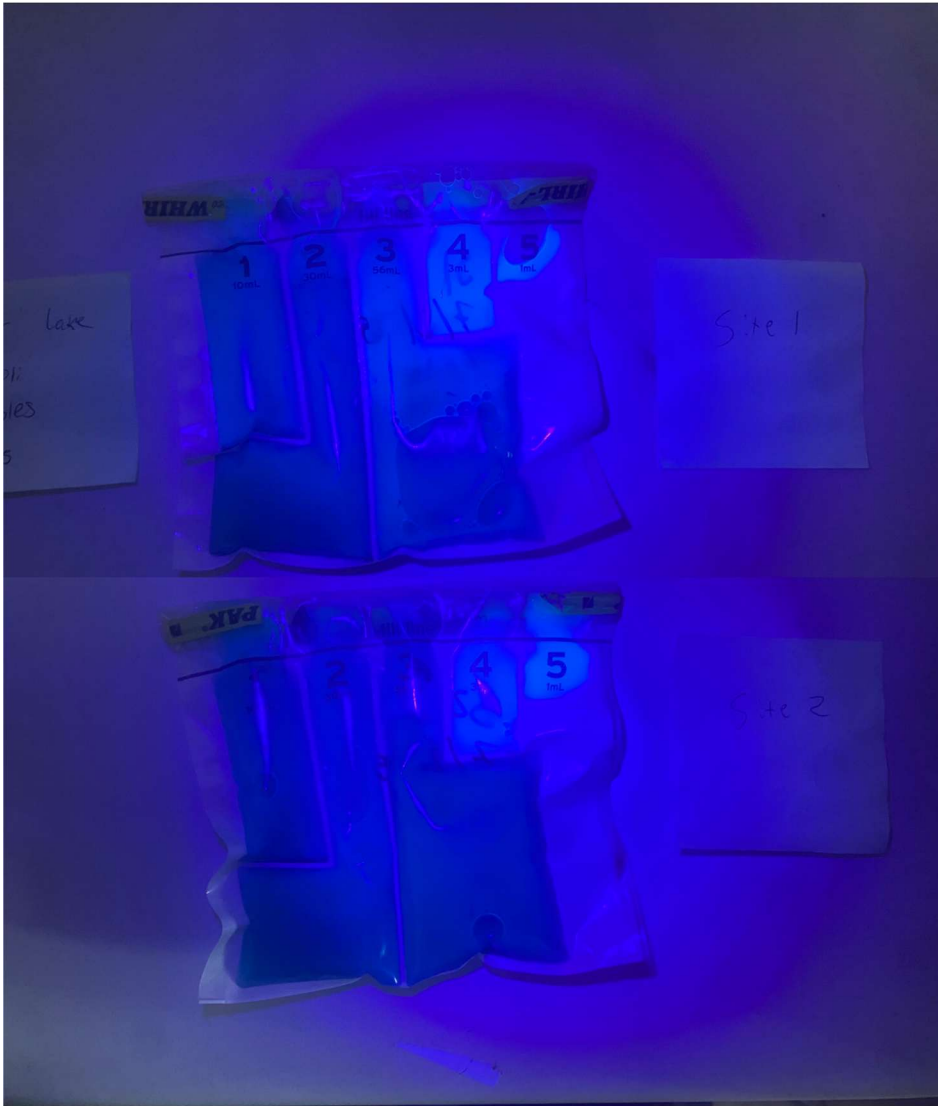
ATTACHMENT B

Field Test Kit Results

Photo of S1 and S2 Aquagenex Field Test Kit results in ambient lighting after a 5-day incubation period at room temperature. Blue coloration indicates the presence of *E. coli* (Channels 1-3 for Site 1; Channels 1-4 for Site 2).



Photo of Aquagenex samples under UV lighting after a 5-day incubation period at room temperatures. The blue fluorescence (Channels 4 and 5 in each sample pack) indicates the presence of other coliform bacteria.



Attachment C

Explanation of the Upper 95% Confidence Limit with MPN

The Upper 95% Confidence Limit (CL) is the highest possible Most Probable Number (MPN) that could be present in the water sample if the same sample is repeatedly tested. That is, the “true” concentration of bacteria in the sample will be at or below the 95% CL. It represents a worst-case upper limit of the quality of the water that would not be exceeded 95 times out of 100 on average if the same sample is analyzed over and over again.”⁴ (Basis of Aquagenx® MPN Table, 2021)

Using the Aquagenx® MPN table: Total coliform analysis is based on the yellow cells that fluoresce under UV light (representing positive for coliforms). Cells that are blue in ambient light are positive for *E. coli*, which also means they are positive for coliforms (Attachment B). This means that both Sites 1 and 2 would fall under the last row of the MPN estimation table provided by Aquagenx®.⁵ Therefore, the MPN/100mL of both samples is greater than 1,000 MPN/100mL, with an upper 95% confidence level of 94,351.

⁴ See Footnote 2.

⁵ See Footnote 1.

ATTACHMENT B

GLEC Lab Report for July 2, 2025 Phosphorus Samples



Great Lakes Environmental Center

Project Number: 2592-B10

July 15, 2025

**Kieser & Associates-Cedar Lake-Jones Ditch
536 E. Michigan Ave., Suite 300
Kalamazoo, MI 49007**

Attention: Natalie Howard

Project Description: Water Quality Sampling

Dear Client,

Enclosed is a copy of your laboratory report relating to samples, as they were received. All tests were performed within the maximum holding times and have met or exceeded QC criteria. Test results are in compliance with The NELAC Institute Standards. Visit our web site for a full list of tests for which GLEC (Lab 2059) is accredited through the New Hampshire Environmental Laboratory Accreditation Program (NH ELAP).

Please don't hesitate to call if you have questions or require further information.

Sincerely,

**Michelle A. Moore
Laboratory Coordinator and Research Scientist/Nutrient Chemistry**



Great Lakes Environmental Center

739 Hastings St., Traverse City MI 49686 - (231) 941-2230 - FAX: (231) 941-2240

Client ID:

Kieser-Cedar Lake

REPORT OF ANALYSIS

Phosphorus

<u>Lab ID</u>	<u>Sample Description</u>	<u>Sample Date</u>	<u>Result</u>	<u>Units</u>	<u>Rep Limit</u>	<u>MDL</u>	<u>Qualifier</u>	<u>Analysis Date</u>	<u>Comments</u>	<u>Initials</u>
3K070200008	Cedar S1	7/2/2025	0.0251	mg/L	0.003	0.0012		7/15/2025		BSC
3K070200009	Cedar S2	7/2/2025	0.0200	mg/L	0.003	0.0012		7/15/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Page 1 of 1

Tuesday, July 15, 2025

Method:

SM 4500-P F

Great Lakes Environmental Center

739 Hastings St., Traverse City MI 49686 - (231) 941-2230 - FAX: (231) 941-2240

Client ID:

Kieser-Cedar Lake

REPORT OF ANALYSIS

Soluble Reactive Phosphorus

<u>Lab ID</u>	<u>Sample Description</u>	<u>Sample Date</u>	<u>Result</u>	<u>Units</u>	<u>Rep Limit</u>	<u>MDL</u>	<u>Qualifier</u>	<u>Analysis Date</u>	<u>Comments</u>	<u>Initials</u>
3K070200010	Cedar S1	7/2/2025	0.0039	mg/L	0.001	0.00047		7/14/2025		BSC
3K070200011	Cedar S2	7/2/2025	0.0068	mg/L	0.001	0.00047		7/14/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Page 1 of 1

Tuesday, July 15, 2025

Method:

SM 4500-P F



GREAT LAKES ENVIRONMENTAL CENTER, INC.

Traverse City, MI - Laboratory
739 Hastings Street
Traverse City, MI 49686

www.glec.com
Phone (231)941-2230
Fax (231)941-2240

CHAIN OF CUSTODY RECORD

Section I. Submitting Company: <u>Kieser & Associates LLC</u> Report Results To: <u>Natalie crum</u> Address: <u>536 E. Michigan</u> Phone: <u>(269)364-7117</u> E-mail: <u>data@kieser-associates.com</u>				Section II. Project Name: <u>Cedar Lake</u> Project Number: P.O.#: Sampled by: (initials) <u>NC</u> <input type="checkbox"/> GLEC <input checked="" type="checkbox"/> Client <u>NC</u>				Section IV. Requested Analysis						
Section III. Sample Information at Collection														
#	GLEC No.	Sample Information			Grab or Composite	Preservative	Filtered Y or N	Sample Containers			SRP	TP	pH of Sample Upon Receipt	
		Date	Time	Matrix				Type	Size	No.				
1		<u>Cedar S1</u>	<u>7/2/25</u>	<u>1:22</u>	<u>SW</u>	<u>grab</u>	<u>Y(TP)</u>	<u>Y(SRP)</u>	<u>glass</u>	<u>250</u>	<u>2</u>	<u>XX</u>	<u>XX</u>	<u>LL</u>
2		<u>Cedar S2</u>	<u>7/2/25</u>	<u>1:35</u>	<u>SW</u>	<u>grab</u>	<u>Y(TP)</u>	<u>Y(SRP)</u>	<u>glass</u>	<u>250</u>	<u>2</u>	<u>XX</u>	<u>XX</u>	<u>LL</u>
3														
4														
5														
6														
7														
8														

Client Notes:

RELEASED BY / ORGANIZATION		DATE	TIME	RECEIVED BY / ORGANIZATION		DATE	TIME
Print Name & Organization: <u>Josh Kipfer</u>				Print Name & Organization			
Signature: <u>[Signature]</u>		<u>7-10-25</u>	<u>14:10</u>	Signature: <u>[Signature]</u>		<u>7-10-25</u>	<u>14:10</u>
Print Name & Organization				Print Name & Organization			
Signature				Signature			

FOR LAB USE ONLY
 Temperature of Samples: 1.9 °C Initials: L Bottle ID #, if applicable Glen Received on Wet Ice
 Notes/Anomalies/Discrepancies:
 GLEC may subcontract out analyses that we do not perform.

MATRIX CODES:	S = SEDIMENT SW = SURFACE WATER	E = EFFLUENT GW = GROUNDWATER	SL = SLUDGE AO = AQUATIC ORGANISM
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ATTACHMENT C

K&A Proposed Work Scope for August Nearshore Water Quality
Monitoring

ATTACHMENT A

K&A Internal Field Scope – Cedar Lake (8-18-25 v1.0)

(derived from Rex Scope 8-12-25; v3.0)

ADMINISTRATIVE SCOPE (as an FYI)

1. Identify Regulatory Positions with Preliminary Findings *(Completed)*
 - a. County and State Health Departments
 - b. EGLE
2. Sharing info with CLIB *(Rex to board with updated information)*
3. Further CLIB conversations with home owners for property access *(Rex...Mark can provide a written draft)*

FIELD SAMPLING SCOPE

4. Water quality re-testing during August LakeScan survey *(K&A)*
 - a. Lake water sampling at the two suspect shoreline properties [FROM THE BEACH...not the boat] (4 sample sets for TP, SRP and *E. coli* bacteria – Oscoda lab, and Aquagenix testing)
 - i. At suspect nearshore locations in front of two homes...four equally spaced sampling transects marked with survey flags for sampling reference:
 1. **4 samples in splash zone** (\leq 6 inches of water) taken from standing on shore with no staff disturbance of water)
 2. **4 at 15 ft from shore** (taken with extension pole sampler reaching out with two extensions to sample 1 foot below surface at locations perpendicular to nearshore grab samples while minimizing sediment disturbance)
 3. **4 at 30 ft from shore** (at about the 3 feet of depth per EGLE, 1 foot below the surface, again using the extension pole sampler and reaching out to deeper water while minimizing sediment disturbance)
 - ii. **1 open lake sample** (as a control) *from the boat* at 100-150 feet from shore in front of the 4 nearshore sampling areas.
 - iii. **1 additional nearshore sample set** to the south...maybe 2-3 houses to the south, and *from the boat* (1 in splash zone, 1 at 15 feet, 1 at 30 feet from shore)
 - iv. Get a few DO/temp readings at the 15 and 30 locations

5. Concurrent Jones Ditch/CLIB site WQ sampling
 - a. Surface water samples (TP, SRP and bacteria – Oscoda lab, and Aquagenix testing) at up to six locations as follows:
 - i. Jones Ditch just upstream of W. Cedar Lake Road culvert (+flow upstream and downstream of culvert)
 - ii. Jones Ditch adjacent to the CLIB property and the stream crossing bridge
 - iii. Jones Ditch at the approximate confluence with Cedar Lake and downstream of any beaver dam activity
 - iv. Very nearshore/wetland standing water at two (2) locations to the north of location #3
 - v. Very nearshore/wetland standing water at 1 location to the south of location #3

Field Procedures:

- Chest waders (muck and limited body contact) and life jackets
- If very mucky, have safety rope/harness for 2nd staffer to help getting back to shoreline as needed
- Long gloves (protection from bacteria)
- Wash off waders after finishing samples
- Hand-sanitizer for post-sampling personal hygiene
- Drop pin location at each sampling location
 - o For sample collect at shoreline, drop pin on flags; then estimate 15 and 30 foot locations using know length of sampling rod with extension
- For extension rod sampling bottle use at 15 and 30 foot locations, liquinox wash, tap water rinse, DI water rinse (no brushes needed, just use 5-gallon buckets for quick clean-up between)
- Have CoCs prepped in advance
- Rex will deliver in one trip, bacteria samples to the lab in Oscoda by 1 pm
- Aquagenix samples to be prepped at the site
- At Jones Ditch:
 - o Samples will be collected from downstream locations moving upstream with care to avoid sediment disturbances at points upstream of the surface water sample collection.
 - o Signs of beaver and other wildlife activity will be noted during sample collection. A field measurement of flow (if it exists), will be taken at upstream and downstream ends of the road culvert along with DO, temperature and conductivity measurements in the ditch.

Anticipated time on-site:

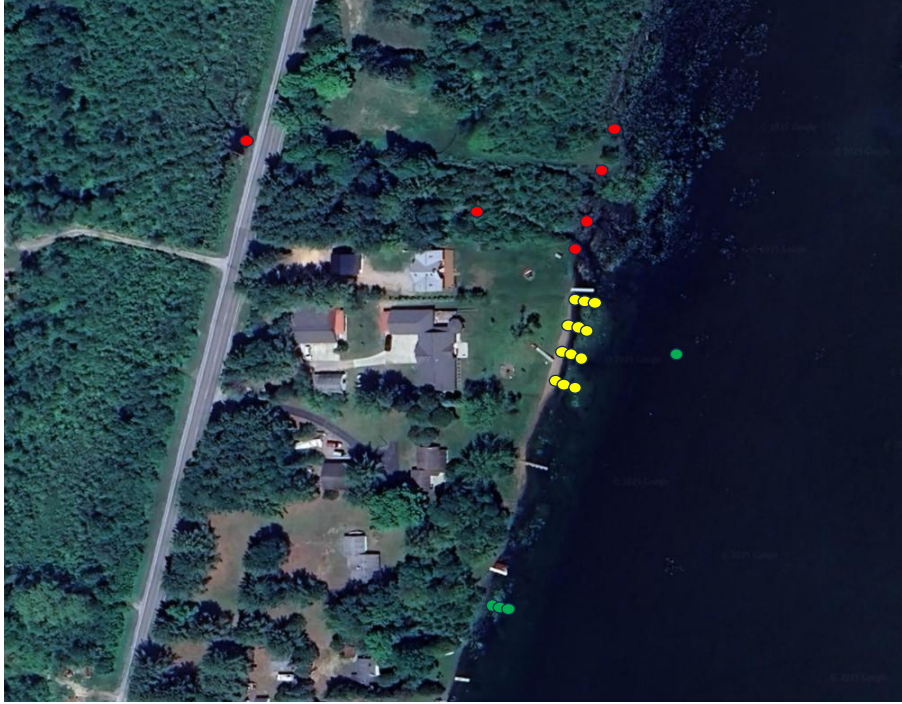
- Jones Ditch: 2-3 hours of additional field time during the late-season LakeScan
- Beach Sampling: 1-2 hours
- Open water/nearshore sampling to south of suspect area, all by boat: 1 hour

Lab Analyses:

- TP & SRP = GLEC
- Bacteria = Local lab in Oscoda (transported by reach in dedicated cooler with ice and CoC)
- Aquagenix = K&A
- Field parameters = K&A

Bottle Needs:

- GLEC:
 - o 22 TP
 - o 22 SRP (and filters)
- Oscoda Lab
 - o 22 Bacteria
- K&A
 - o 22 Aquagenix



2025 Cedar Lake P and E. coli Sampling Locations

- Jones Ditch sampling locations (6)
- Control sampling locations (4)
- Suspect nearshore sampling locations (12)

ATTACHMENT D

Laboratory Reports for August 27, 2025 Water Quality
Monitoring



Great Lakes Environmental Center

Project Number: 2592-B10

September 12, 2025

**Kieser & Associates-Cedar Lake-Jones Ditch
536 E. Michigan Ave., Suite 300
Kalamazoo, MI 49007**

Attention: Natalie Crum

Project Description: Water Quality Sampling

Dear Client,

Enclosed is a copy of your laboratory report relating to samples, as they were received. All tests were performed within the maximum holding times and have met or exceeded QC criteria. Test results are in compliance with The NELAC Institute Standards. Visit our web site for a full list of tests for which GLEC (Lab 2059) is accredited through the New Hampshire Environmental Laboratory Accreditation Program (NH ELAP).

Please don't hesitate to call if you have questions or require further information.

Sincerely,

**Michelle A. Moore
Laboratory Coordinator and Research Scientist/Nutrient Chemistry**



Great Lakes Environmental Center

739 Hastings St., Traverse City MI 49686 - (231) 941-2230 - FAX: (231) 941-2240

Client ID: 2592-B10

Kieser-Cedar Lake

REPORT OF ANALYSIS

Phosphorus

<u>Lab ID</u>	<u>Sample Description</u>	<u>Sample Date</u>	<u>Result</u>	<u>Units</u>	<u>Rep Limit</u>	<u>MDL</u>	<u>Qualifier</u>	<u>Analysis Date</u>	<u>Comments</u>	<u>Initials</u>
3K082700012	Jones Culvert Up	8/27/2025	0.0312	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700013	Jones Bridge	8/27/2025	0.0392	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700014	J-Conf	8/27/2025	0.0332	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700015	J-NW1	8/27/2025	0.0348	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700016	J-NW2	8/27/2025	0.0354	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700017	J-SW	8/27/2025	0.0335	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700018	T1-5	8/27/2025	0.0225	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700019	T-15	8/27/2025	0.0234	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700020	T1-30	8/27/2025	0.0216	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700021	T2-5	8/27/2025	0.0213	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700022	T2-15	8/27/2025	0.0282	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700023	T2-30	8/27/2025	0.0179	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700024	T3-5	8/27/2025	0.0227	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700025	T3-15	8/27/2025	0.0230	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700026	T3-30	8/27/2025	0.0333	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700027	T4-5	8/27/2025	0.0196	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700028	T4-15	8/27/2025	0.0196	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700029	T4-30	8/27/2025	0.0346	mg/L	0.003	0.0012		9/11/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Page 1 of 2

Friday, September 12, 2025

Method:

SM 4500-P F

<i>Lab ID</i>	<i>Sample Description</i>	<i>Sample Date</i>	<i>Result</i>	<i>Units</i>	<i>Rep Limit</i>	<i>MDL</i>	<i>Qualifier</i>	<i>Analysis Date</i>	<i>Comments</i>	<i>Initials</i>
3K082700030	C-5	8/27/2025	0.0327	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700031	C-15	8/27/2025	0.0265	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700032	C-30	8/27/2025	0.0203	mg/L	0.003	0.0012		9/11/2025		BSC
3K082700033	C-L	8/27/2025	0.0408	mg/L	0.003	0.0012		9/11/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Method:

Great Lakes Environmental Center

739 Hastings St., Traverse City MI 49686 - (231) 941-2230 - FAX: (231) 941-2240

Client ID: 2592-B10

Kieser-Cedar Lake

REPORT OF ANALYSIS

Soluble Reactive Phosphorus

<u>Lab ID</u>	<u>Sample Description</u>	<u>Sample Date</u>	<u>Result</u>	<u>Units</u>	<u>Rep Limit</u>	<u>MDL</u>	<u>Qualifier</u>	<u>Analysis Date</u>	<u>Comments</u>	<u>Initials</u>
3K082700034	Jones Culvert Up	8/27/2025	0.0045	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700035	Jones Bridge	8/27/2025	0.0077	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700036	J-Conf	8/27/2025	0.0040	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700037	J-NW1	8/27/2025	0.0037	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700038	J-NW2	8/27/2025	0.0028	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700039	J-SW	8/27/2025	0.0068	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700040	T1-5	8/27/2025	0.0032	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700041	T-15	8/27/2025	0.0036	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700042	T1-30	8/27/2025	0.0036	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700043	T2-5	8/27/2025	0.0031	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700044	T2-15	8/27/2025	0.0027	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700045	T2-30	8/27/2025	0.0029	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700046	T3-5	8/27/2025	0.0021	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700047	T3-15	8/27/2025	0.0026	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700048	T3-30	8/27/2025	0.0027	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700049	T4-5	8/27/2025	0.0018	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700050	T4-15	8/27/2025	0.0016	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700051	T4-30	8/27/2025	0.0033	mg/L	0.001	0.00047		9/4/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Method:

Page 1 of 2

Friday, September 12, 2025

SM 4500-P F

<i>Lab ID</i>	<i>Sample Description</i>	<i>Sample Date</i>	<i>Result</i>	<i>Units</i>	<i>Rep Limit</i>	<i>MDL</i>	<i>Qualifier</i>	<i>Analysis Date</i>	<i>Comments</i>	<i>Initials</i>
3K082700052	C-5	8/27/2025	0.0017	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700053	C-15	8/27/2025	0.0016	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700054	C-30	8/27/2025	0.0020	mg/L	0.001	0.00047		9/4/2025		BSC
3K082700055	C-L	8/27/2025	0.0034	mg/L	0.001	0.00047		9/4/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.



GREAT LAKES ENVIRONMENTAL CENTER, INC.

Traverse City, MI - Laboratory
739 Hastings Street
Traverse City, MI 49686

www.glec.com
Phone (231)941-2230
Fax (231)941-2240

CHAIN OF CUSTODY RECORD

Section I.			Section II.					Section IV.						
Submitting Company: <u>Kieser & Associates, LLC</u>			Project Name: <u>Cedar Lake</u>					Requested Analysis						
Report Results To: <u>Natalie Crum</u>			Project Number:											
Address: <u>536 E. Michigan Ave, Kalamazoo, MI 49007</u>			P.O.#:											
Phone: <u>(269) 344-7117</u> E-mail: <u>natalie@kieser-associates.com</u>			Sampled by: (initials) <u>NC FJK</u> <input type="checkbox"/> GLEC <input checked="" type="checkbox"/> Client											
Section III. Sample Information at Collection												pH of Sample Upon Receipt		
#	GLEC No.	Sample Identification	Sample Information			Grab or Composite	Preservative	Filtered Y or N	Sample Containers				TP	SRP
			Date	Time	Matrix				Type	Size	No.			
1		T2-30	10:09	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
2		T2-S	10:18	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
3		T2-15	10:21	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
4		T2-30	10:28	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
5		T3-S	10:31	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
6		T3-15	10:35	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
7		T3-30	10:52	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1		X	X
8		T4-S	10:39	8/27/25	SW	grab	Y (TP, H ₂ SO ₄)	Y (SRP)	glass plastic	250 ml 125 ml	1	X	X	
Client Notes:														
RELEASED BY / ORGANIZATION				DATE	TIME	RECEIVED BY / ORGANIZATION				DATE	TIME			
Print Name & Organization: <u>Mark S. Kieser - Kieser</u>						Print Name & Organization: <u>Natalie Moore GLEC</u>								
Signature: <u>[Signature]</u>				<u>9-2-25</u>	<u>9:15</u>	Signature: <u>[Signature]</u>				<u>9/2/25</u>	<u>9:15</u>			
Print Name & Organization:						Print Name & Organization:								
Signature:						Signature:								
FOR LAB USE ONLY														
Temperature of Samples: <u>5.9</u> °C Initials: <u>mm</u> Bottle ID #, if applicable <u>35464</u> <input type="checkbox"/> Received on Wet Ice														
Notes/Anomalies/Discrepancies:														
GLEC may subcontract out analyses that we do not perform.														
MATRIX CODES:			S = SEDIMENT SW = SURFACE WATER			E = EFFLUENT GW = GROUNDWATER			SL = SLUDGE AO = AQUATIC ORGANISM					



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-1 Project Name: Cedar Lake Improvement Board
Client Sample ID: C-5 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:35 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

This report is for informational purposes only. This report may not be used for compliance pursuant to 40 CFR Part 141 and related regulations applicable to public water systems.
The results herein relate only to the items/batch tested, calibrated, or sampled in this report. "ND" indicates that the analyte was not detected nor present in the sample tested at levels at or above the limit of quantitation. Results only pertain to sample as recived or sampled by Enviro Lab Services Inc.
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Enviro Lab Services, Inc.
4150 Arrow Street, Oscoda, MI 48750
Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-2 Project Name: Cedar Lake Improvement Board
Client Sample ID: C-15 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:37 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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4150 Arrow Street, Oscoda, MI 48750
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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-3 Project Name: Cedar Lake Improvement Board
Client Sample ID: C-30 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:40 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-4 Project Name: Cedar Lake Improvement Board
Client Sample ID: C-L Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:44 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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4150 Arrow Street, Oscoda, MI 48750
Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-5 Project Name: Cedar Lake Improvement Board
Client Sample ID: Jones-Culvert-UP Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:40 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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Enviro Lab Services, Inc.
4150 Arrow Street, Oscoda, MI 48750
Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-6 Project Name: Cedar Lake Improvement Board
Client Sample ID: Jones-Bridge Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:55 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (4460 CFU/100mL) and E. coli (40 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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Enviro Lab Services, Inc.
4150 Arrow Street, Oscoda, MI 48750
Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-7 Project Name: Cedar Lake Improvement Board
Client Sample ID: J-Conf Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 9:12 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (5080 CFU/100mL) and E. coli (60 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-8 Project Name: Cedar Lake Improvement Board
Client Sample ID: J-NW1 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 9:00 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-9 Project Name: Cedar Lake Improvement Board
Client Sample ID: J-NW2 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:55 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-10 Project Name: Cedar Lake Improvement Board
Client Sample ID: J-SW Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 9:12 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-11 Project Name: Cedar Lake Improvement Board
Client Sample ID: T1-5 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 9:00 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (8100 CFU/100mL) and E. coli (40 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-12 Project Name: Cedar Lake Improvement Board
Client Sample ID: T1-15 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 8:55 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (3580 CFU/100mL) and E. coli (20 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-13 Project Name: Cedar Lake Improvement Board
Client Sample ID: T1-30 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 9:23 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-14 Project Name: Cedar Lake Improvement Board
Client Sample ID: T2-5 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:02 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (2440 CFU/100mL) and E. coli (ND CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 **Client:** Kieser & Associates
Sample ID: 25082701-15 **Project Name:** Cedar Lake Improvement Board
Client Sample ID: T2-15 **Address:** Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water **Contact:** Rex Vaughn
Sample Date/Time: 8/27/2025 10:05 **Reporting To:** data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser **Phone #:** 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms **Analyst:** Jonas Berenkowski **Analysis Date:** 8/27/2025 **1:00:00 PM**

Analyte	CAS #	Method	Result	Units	Reporting Limit	MCL ^A	MCLG ^A
Total Coliforms	N/A	mColiBlue-24	2600	CFU/100mL	20	NA	NA
E. coli	N/A	mColiBlue-24	ND	CFU/100mL	20	NA	NA

Definitions:

- ND = Not detected
- POS = Analyte detected in sample above reporting limit
- MCL = Maximum contaminant level
- MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY:		Lab Director	Date:	8/29/2025
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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-16 Project Name: Cedar Lake Improvement Board
Client Sample ID: T2-30 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:09 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms and E. coli.

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-17 Project Name: Cedar Lake Improvement Board
Client Sample ID: T3-5 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:18 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (4240 CFU/100mL) and E. coli (ND CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-18 Project Name: Cedar Lake Improvement Board
Client Sample ID: T3-15 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:21 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (1960 CFU/100mL) and E. coli (20 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-19 Project Name: Cedar Lake Improvement Board
Client Sample ID: T3-30 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:28 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (2640 CFU/100mL) and E. coli (20 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-20 Project Name: Cedar Lake Improvement Board
Client Sample ID: T4-5 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:31 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (3800 CFU/100mL) and E. coli (60 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 Client: Kieser & Associates
Sample ID: 25082701-21 Project Name: Cedar Lake Improvement Board
Client Sample ID: T4-15 Address: Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water Contact: Rex Vaughn
Sample Date/Time: 8/27/2025 10:35 Reporting To: data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser Phone #: 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms Analyst: Jonas Berenkowski Analysis Date: 8/27/2025 1:00:00 PM

Table with 8 columns: Analyte, CAS #, Method, Result, Units, Reporting Limit, MCL^A, MCLG^A. Rows include Total Coliforms (3680 CFU/100mL) and E. coli (20 CFU/100mL).

Definitions:

ND = Not detected
POS = Analyte detected in sample above reporting limit
MCL = Maximum contaminant level
MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY: [Signature] Lab Director Date: 8/29/2025

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The results herein relate only to the items/batch tested, calibrated, or sampled in this report. "ND" indicates that the analyte was not detected nor present in the sample tested at levels at or above the limit of quantitation. Results only pertain to sample as recived or sampled by Enviro Lab Services Inc.

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Enviro Lab Services, Inc.
4150 Arrow Street, Oscoda, MI 48750
Phone: (248)882-1245



USEPA Lab ID: MI9885

Michigan EGLE Lab ID: 9115

Laboratory Report

Order ID: 25082701 **Client:** Kieser & Associates
Sample ID: 25082701-22 **Project Name:** Cedar Lake Improvement Board
Client Sample ID: T4-30 **Address:** Cedar Lake, Oscoda MI 48750
Sample Matrix: Surface Water **Contact:** Rex Vaughn
Sample Date/Time: 8/27/2025 10:52 **Reporting To:** data@kieser-associates.com
Received Date/Time: 8/27/2025 12:31
Sample Collected By: Crum/Kieser **Phone #:** 269-344-7117
Report Date: 8/29/2025

TEST: E. coli / Total Coliforms **Analyst:** Jonas Berenkowski **Analysis Date:** 8/27/2025 **1:00:00 PM**

Analyte	CAS #	Method	Result	Units	Reporting Limit	MCL ^A	MCLG ^A
Total Coliforms	N/A	mColiBlue-24	1280	CFU/100mL	20	NA	NA
E. coli	N/A	mColiBlue-24	20	CFU/100mL	20	NA	NA

Definitions:

ND = Not detected
 POS = Analyte detected in sample above reporting limit
 MCL = Maximum contaminant level
 MCLG = Maximum contaminant level goal

Comments:

FINAL APPROVAL

APPROVED BY:		Lab Director	Date:	8/29/2025
--------------	--	--------------	-------	-----------

This report is for informational purposes only. This report may not be used for compliance pursuant to 40 CFR Part 141 and related regulations applicable to public water systems.

The results herein relate only to the items/batch tested, calibrated, or sampled in this report. "ND" indicates that the analyte was not detected nor present in the sample tested at levels at or above the limit of quantitation. Results only pertain to sample as recived or sampled by Enviro Lab Services Inc.

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4150 Arrow Street
Oscoda, MI 48750

Form #FO-20
Contact
Phone: (620) 417-3608
www.envirolabservice.com

USEPA Lab ID: M19885
Michigan EGLE Lab ID: 9115

Client Name:		Kieser & Associates					Analysis Requested					Notes			
Address:		536 E Michigan Ave, ste 300, Kalamazoo, MI 49007					EPA 200.8 Metals	Partial Chemistry	EPA 537.1 PFAS in Drinking Water	EPA 1633 Aqueous PFAS	EPA 1633 Solids PFAS	Bacteria (E. coli/Coliform)	Sample Receipt (Lab Use Only)		
Report To:		Natalie Crum													
Phone #:		269-344-7117													
Email:		data@Kieser-associates.com													
Sampler Name:		Crum / Kieser		Order ID (Lab Use Only):		25082701									
Sampling Address:		cedar lake, oscoda, MI													
Sample Identification	Matrix	Sample Type	Preservatives	Date Collected	Time Collected	Container #	Lab Sample Identification (Lab Use Only)						Temp °C	pH	
C-5	SW	grab		8/27/25	8:35	1	25082701-1						X		
C-15					8:37		25082701-2						X		
C-30					8:40		25082701-3						X		
C-L					8:44		25082701-4						X		
Jones-culvert-up					8:40		25082701-5						X		
Jones-bridge					8:55		25082701-6						X		
J-conf					9:12		25082701-7						X		
J-NW1					9:00		25082701-8						X		
J-NW2					8:55		25082701-9						X		
J-SW					9:23		25082701-10						X		

Tran. #	Released By	Received By	Date	Time
1			8-27-25	15:00
2				
3				

Approved by: QSM

Revision Date: 05-17-2023

Revision: 2



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Oscoda, MI 48750

Form #FO-20
Contact
Phone: (620) 417-3608
www.envirolabservice.com

USEPA Lab ID: MI9885
Michigan EGLE Lab ID: 9115

Client Name:		Kieser & Associates						Analysis Requested					Notes		
Address:		536 E Michigan Ave, ste 300, Kalamazoo, MI 49007						EPA 200.8 Metals	Partial Chemistry	EPA 537.1 PFAS in Drinking Water	EPA 1633 Aqueous PFAS	EPA 1633 Solids PFAS	Bacteria (E. coli/Coliform)	Sample Receipt (Lab Use Only)	
Report To:		Natalie Crum													
Phone #:		269-344-7117													
Email:		data@kieser-associates.com													
Sampler Name:		Crum / Kieser		Order ID (Lab Use Only):		25082701									
Sampling Address:		Cedar Lake, Oscoda, MI													
Sample Identification	Matrix	Sample Type	Preservatives	Date Collected	Time Collected	Container #	Lab Sample Identification (Lab Use Only)						Temp °C	pH	
T1-5	SW	grab		8-27-25	10:02	1	25082701-11								
T1-15					10:05		25082701-12								
T1-30					10:09		25082701-13								
T2-5					10:18		25082701-14								
T2-15					10:21		25082701-15								
T2-30					10:28		25082701-16								
T3-5					10:31		25082701-17								
T3-15					10:35		25082701-18								
T3-30					10:52		25082701-19								

Tran. #	Released By	Received By	Date	Time
1			8-27-25	15:07
2				
3				

Approved by: QSM

Revision Date: 05-17-2023

Revision: 2



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Oscoda, MI 48750

Form #FO-20
Contact
Phone: (620) 417-3608
www.envirolabservice.com

USEPA Lab ID: MI9885
Michigan EGLE Lab ID: 9115

Client Name:		Kieser & Associates						Analysis Requested					Notes		
Address:		536 E Michigan Ave, Ste 300, Kalamazoo, MI 49007						EPA 200.8 Metals	Partial Chemistry	EPA 537.1 PFAS in Drinking Water	EPA 1633 Aqueous PFAS	EPA 1633 Solids PFAS	Bacteria (E. coli/Coliform)	Sample Receipt (Lab Use Only) Temp °C pH	
Report To:		Natalie Crum													
Phone #:		269-344-7117													
Email:		data@kieser-associates.com													
Sampler Name:		Crum / Kieser		Order ID (Lab Use Only):		25082701									
Sampling Address:		Cedar Lake, Oscoda, MI													
Sample Identification	Matrix	Sample Type	Preservatives	Date Collected	Time Collected	Container #	Lab Sample Identification (Lab Use Only)								
T4-5	SW	grab		8-27-25	10:39	1	25082701-20							X	
T4-15	↓	↓		↓	10:42	↓	25082701-21							X	
T4-30	↓	↓		↓	10:55	↓	25082701-22							X	

MC
8/27/25

Tran. #	Released By	Received By	Date	Time
1	<i>P4 Vaughn</i>	<i>[Signature]</i>	8/27/25	12:31 PM
2				
3				

ATTACHMENT E

Statistical Analyses for August 27, 2025 SRP Data

ATTACHMENT E

Statistical Analysis of Nearshore SRP Data from August 27, 2025

K&A completed select statistical analyses of SRP sampling results from the August 2025 water quality survey. These analyses were conducted to examine the nature of three targeted nearshore areas including: Jones Ditch, Suspect Nearshore and Control sampling zones. Results are reported herein.

Average SRP Concentrations by Nearshore Zone

Figure E-1 compares the mean SRP values across the three sampling zones. Findings indicate that Jones Ditch exhibits the highest mean SRP concentration at 4.3 µg/L, followed by the suspect nearshore area at 2.8 µg/L and the control at 1.7 µg/L.

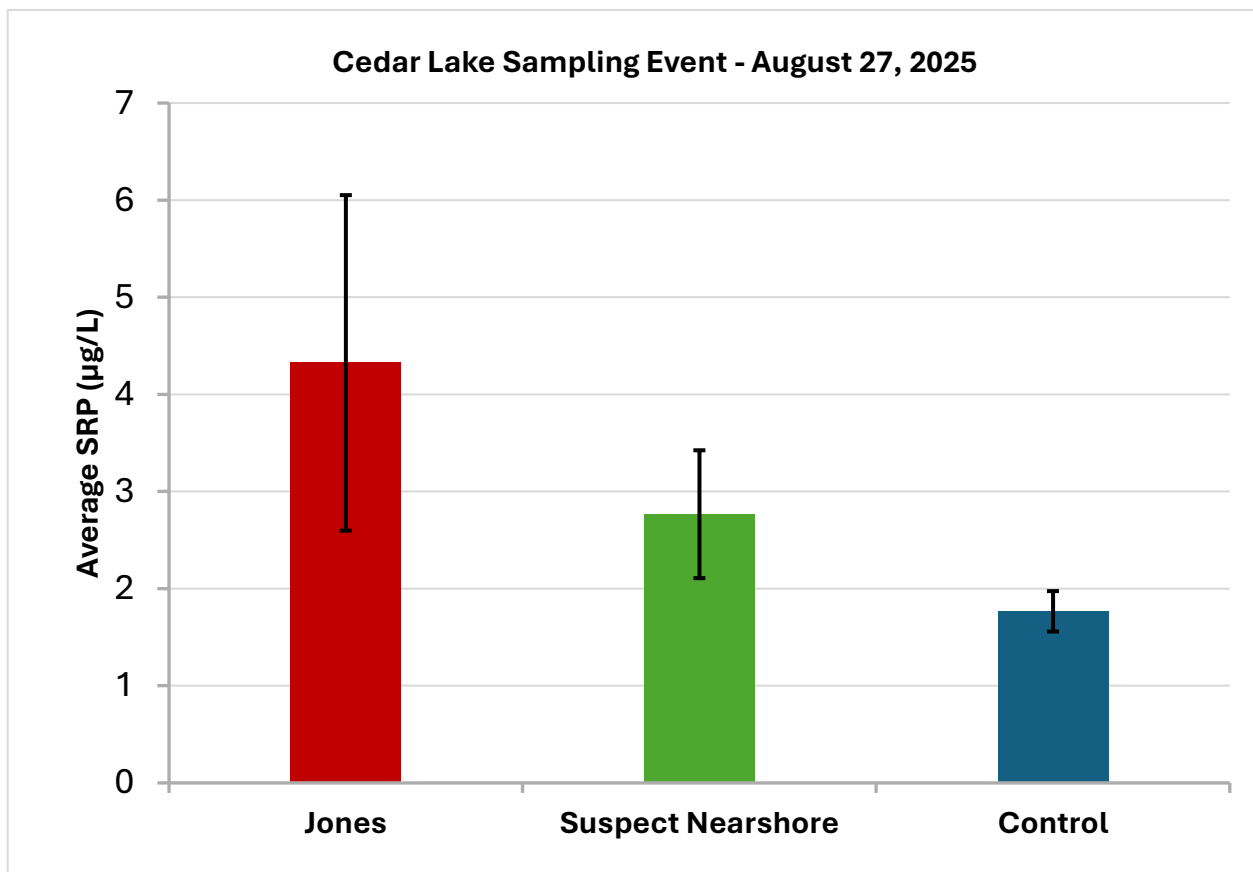


Figure E-1. Mean SRP(µg/L) concentrations at three sampling locations; error bars represent +/- 1 standard deviation. Jones Ditch is based on 4 nearshore samples, 12 in the suspect area and three in the Control zone.

The standard deviation around the mean for Jones Ditch exhibits the greatest variability in comparison to the lower standard deviations for the suspect nearshore and control areas. The variability within the data for Jones and the suspect area suggests that the averages for these two

areas may not be significantly different, given the overlap in their standard deviations. The standard deviation for the control area does not overlap with either of the other two, suggesting the average for the control area is significantly different, while the overlap between Jones and nearshore samples does not.

Figure E-2 shows the average SRP levels at each nearshore sampling site south of Jones Ditch, along with individual data points at and north of the ditch confluence with the shoreline. For the suspect nearshore zone south of Jones Ditch and the control area, averages represent the three sampling points of each transect. Interestingly, mapped results indicate that the average SRP concentration increases as it gets closer to Jones Ditch (white arrows) from the south and somewhat so for sampling results at, and north of the confluence. This suggests a hot spot or source of SRP originating from the confluence area.



Figure E-2. Average SRP ($\mu\text{g/L}$) at each sampling site.

T-test Results

Due to statistical uncertainty between locations associated with differing sample sizes, a T-test was used to determine whether the difference between means of two groups is statistically significant considering their variability, standard deviation and sample size. The test will provide T-values that are critical to understand the difference between the mean values of two locations,

as well as a P-value. Simply, if the P-value is greater than 0.05 (a threshold scientists commonly use), then the difference in mean values could easily be due to randomness. However, if the P-value is smaller than 0.05, it means there is less than a 5% chance that the observed difference is due to random chance (i.e., the difference is real and statistically significant).

Table E-1 presents the T-test analysis comparing the suspect nearshore data with the nearshore control location. A comparison between the “T-stat” value and the “T-Critical” value can indicate whether there is a significant difference between the mean values of the two locations. Since the T-stat value (4.45) is larger than the T-Critical value (2.20), there is a statistically significant difference between the two means at the 95% confidence level. Additionally, because the P-value (0.00) is smaller than 0.05, the difference between the means of the two locations is statistically significant despite the difference in sample size between the locations. There is a 0.0% probability that such a difference (or greater) could occur by random chance.

Table E-1. T-test: Two-sample assuming unequal variances between the suspect nearshore area and the control area. The control area is based on three nearshore samples not including the in-lake sample.

<i>Statistical Variable</i>	<i>Suspect nearshore</i>	<i>Control</i>
Mean	2.77	1.77
Variance	0.43	0.04
Observations	12	3
Hypothesized Mean Difference	0	
Df	11	
t Stat	4.45	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.80	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.20	

Table E-2 presents the T-test analysis comparing the nearshore Jones Ditch sample mean with the suspect nearshore location. The result of the T-stat value (1.76) is smaller than the T-Critical value (3.18) suggesting there is no statistically significant difference between the two means at the 95% confidence level. Additionally, because the P-value (0.18) is larger than 0.05, the difference between the means of the two locations is not statistically significant, and there is approximately an 18% probability that such a difference (or greater) could occur by random chance.

Table E-2. T-test: Two-sample assuming unequal variances between the Jones Ditch area and the suspect nearshore area. Jones area is based on only four samples and does not include the two creek samples.

<i>Statistical Variable</i>	<i>Jones</i>	<i>Suspect nearshore</i>
Mean	4.33	2.77
Variance	2.98	0.43
Observations	4	12
Hypothesized Mean Difference	0	
df	3	
t Stat	1.76	
P(T<=t) two-tail	0.09	
t Critical two-tail	2.35	

T-test results suggest that the variation and distribution of the SRP values at the suspect nearshore and control locations are not within the expected normal range, despite the differences in sample size. However, the SRP values between Jones Ditch and the suspect nearshore locations are not significantly different, and these differences are attributable to random variation. This further supports the hypothesis that a source (or sources) of SRP near Jones Ditch is influencing the observed results. Based on the T-test analysis and Figure E-2, this sourcing appears to influence the SRP levels at the suspected nearshore area.

Shapiro-Wilk Normality Test

The Shapiro-Wilk normality test was conducted to understand whether the SRP distribution in each location is normal. The results show that all SRP values are normally distributed within their respective locations suggesting that a potential SRP source near Jones Ditch is mainly causing increased nutrient levels around the two sampled areas north and south of the Jones Ditch confluence, but not significantly affecting all three locations.

Quantile (Q)–Quantile (Q) Plots

Quantile (Q)–Quantile (Q) plots are a graphical comparison used here to determine whether the SRP values in each zone are normally distributed. Figure E-3 shows the Q-Q plots for all three locations, highlighting a normal distribution in each area with Jones Ditch nearshore results being the least normally distributed (lowest R² value). This again supports the notion that the SRP distribution within each area is normally distributed, indicating that the factor elevating SRP concentrations at Jones Ditch primarily affects the values in that area.

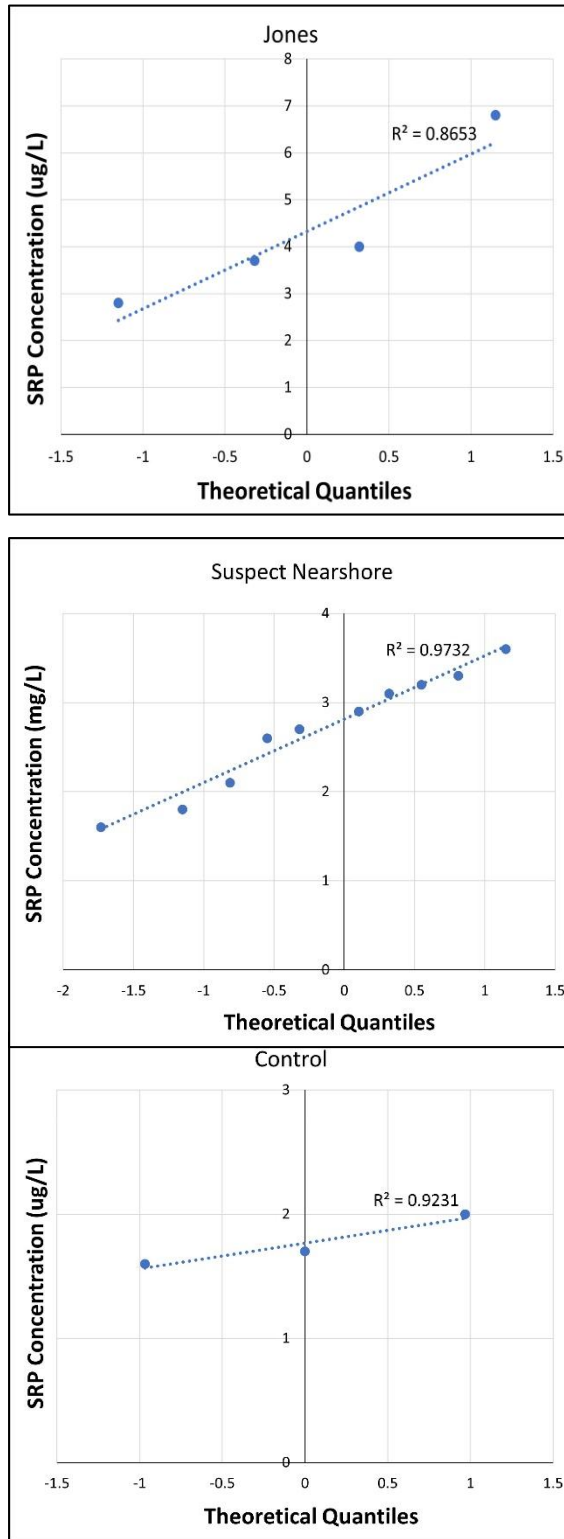


Figure E-3. Q-Q plots for all sample locations showing the normal distribution of SRP values in each area.

Prediction Limit Equation

Finally, the prediction limit equation represented as: $\text{prediction limit} = \text{mean} + (\text{standard deviation} * t\text{-value})$ is used to provide an upper bound for where a future observation might fall based on the available SRP results. Based on these predictions in Table E-3, the Jones Ditch area is expected to have higher results compared to the other locations. This further supports the notion that Jones Ditch shoreline area is experiencing an increasing SRP level due to a nearby source.

Table E-3: Upper Prediction limit of SRP concentration at Cedar Lake.

Sampling Location	SRP Prediction limit (ug/L)
Jones Ditch	10.47
Suspect Nearshore	4.27
Control	2.80

Notable are the July 2, 2025 nearshore SRP concentrations collected in front of the suspect nearshore location that ranged from 4-7 ug/L. These suggest the corresponding nearshore prediction limit is realistic.

Summary

Results of statistical analyses confirm that measured SRP levels on August 27, 2025 reflect a localized source of phosphorus at or near the Jones Ditch confluence with the Cedar Lake shoreline. Data are statistically different in the nearshore control area with lower SRP concentrations (to the south of the suspect nearshore area) than concentrations in sampling zones to the north surrounding Jones Ditch. Averaged nearshore zone concentrations and individual data also tend to point to a Jones Ditch localized source.

Statistical analyses of these snap-shot sampling results for a single date in August 2025 provide sufficient indications of external SRP loading to Cedar Lake in the immediate vicinity of the Jones Ditch confluence where luxuriant algal growths have been observed. These tests, however, do not necessarily distinguish whether the source is only Jones Ditch or Jones Ditch and possible localized septic systems discharges.

The potential for septic system discharges is evidenced by bacterial sampling results (reported in the main body of this memorandum) and Attachment F modeling of nearshore P concentrations. Additional testing will be needed to confirm sources of SRP. Such monitoring would include shallow groundwater testing near the shoreline for both SRP and bacterial levels. Bacterial source tracking for Jones Ditch is also recommended. This would require DNA testing to determine whether upstream bacterial detections are human or animal. Limited DNA testing of shallow groundwater along the shoreline would help confirm that the only source in groundwater (if detected) would be upgradient septic system drain fields.

ATTACHMENT F

Nearshore Mass Balance Analysis of Jones Ditch SRP Loading

Attachment F

Jones Ditch Phosphorus Loading Contributions to Nearshore Waters

Overview

Using flow and phosphorus data from Jones Ditch, K&A preliminarily examined the loading of SRP as lbs/day from the Ditch to the lake for August 2025 sampling conditions. This was completed using a proprietary K&A nearshore loading model based on a traditional flow net analysis to create a phosphorus mass balance for targeted nearshore areas. The purpose of this exercise was to simulate the resultant nearshore SRP concentrations based solely on Jones Ditch loads. If loading simulations generated the actual nearshore concentrations measured in the suspect areas, Jones Ditch could be considered the sole source of P loading. If loading was not sufficient to generate measured nearshore concentrations, then other sources might be present.

The model used a Jones Ditch flow of 0.056 cfs and an SRP concentration of 4.5 $\mu\text{g/L}$ measured just upstream from its confluence at the shoreline on August 27, 2025 (Figure F-1). A background lake concentration of 1.6 $\mu\text{g/L}$ was used based on the lowest measured nearshore SRP level at the southern control site. As illustrated in Attachment E, this southern location is statistically different than the sampled areas to the north and south of Jones Ditch. This makes it reasonable to use the 1.6 $\mu\text{g/L}$ as a background nearshore concentration.

Algal uptake of SRP was not considered in these simulations, despite the typically high uptake associated with prolific growth. This makes model assumptions more conservative in forecasting Jones Ditch load impacts on nearshore SRP concentrations.

The modeling exercise assumed an area of 10,500 ft^2 (a zone 350 feet along the lakeshore, extending 30 feet into the lake). Using an average depth of 3 feet for this area resulted in a nearshore water volume of 31,500 cubic feet of lake water (or 236,000 gallons) as the mixing zone. Figure E-1 conceptually illustrates the area of mixing considered in this analysis.

The model simulated nearshore concentrations over time, examining how long it would take the volume of nearshore water (at a starting concentration of 1.6 $\mu\text{g/L}$) to reach the observed average SRP concentration of 3.2 $\mu\text{g/L}$ based on measured concentrations within this area. Simulations also considered water volume replacement by mixing with other lake water (at 1.6 $\mu\text{g/L}$) under conditions of 0, 10 and 80% daily replacement volumes. These latter assumptions allow for consideration of a range of wind mixing scenarios such as: no wind (0% mixing), light winds (10% mixing) and windy nearshore conditions (80% mixing) for the period of simulation. The 0% mixing condition is never likely to happen in nature because water currents can be generated by winds, temperature differences, tributary inflows, groundwater upwelling and boat traffic. It is used here as an illustration of the most conservative mass balance assumption of no mixing and

no algal uptake to determine whether there is sufficient Jones Ditch loading to minimally reach measured nearshore lake concentrations.

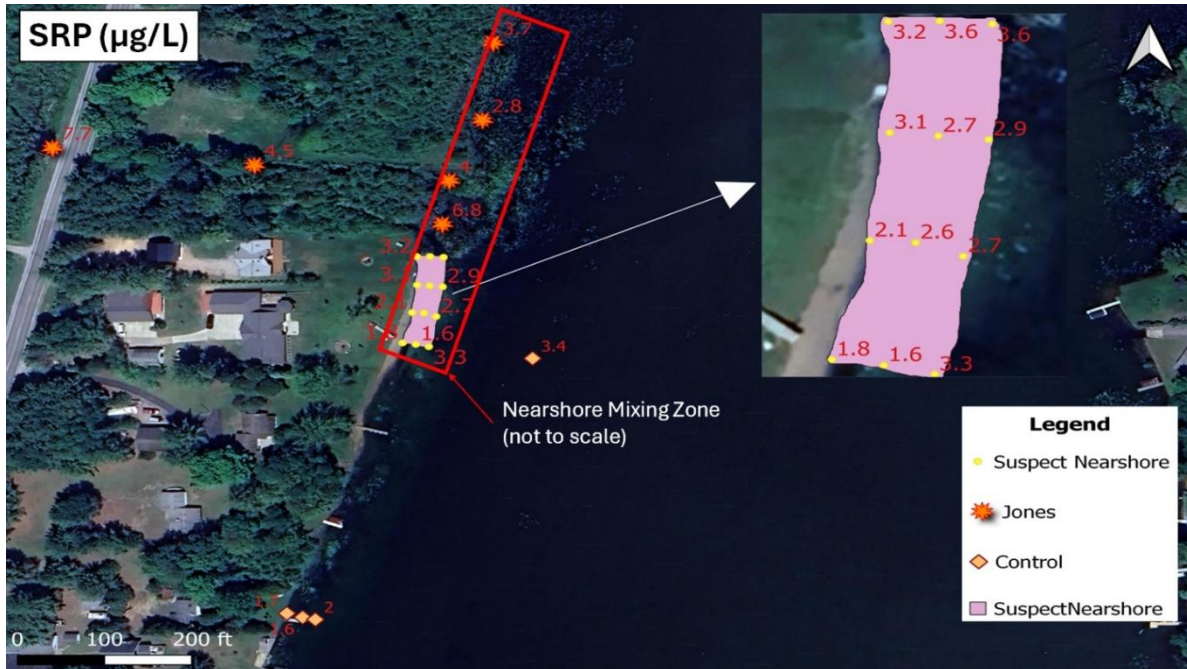


Figure F-1. Hypothetical mixing zone overlaying the suspected nearshore area and the Jones Ditch Shoreline.

Simulation Results

Figure F-2 shows a hypothetical SRP accrual in the nearshore zone over a 5-day period starting at a lakeshore concentration of 1.6 $\mu\text{g/L}$. With no mixing, the 3.2 $\mu\text{g/L}$ average measured nearshore concentration of SRP is reached in five days. With some mixing (10%), simulated concentrations only reach 2.2 $\mu\text{g/L}$ within five days. If windy conditions prevailed over this 5-day timeframe, nearshore concentrations would peak at 2 $\mu\text{g/L}$ in one day, then diminish by continuous dilution.

To illustrate hypothetical nearshore phosphorus concentrations over a 30-day period, Figure F-3 shows results for this longer simulation period. Though rather unrealistic, no lake water mixing in the nearshore area would result in an equilibrium concentration of 4.5 $\mu\text{g/L}$ after one month of only Jones Discharge P discharges. With 10% mixing, the measured nearshore average concentration of 3.2 $\mu\text{g/L}$ would be reached after 14 days with just Jones Ditch inputs. The 80% mixing scenario would suggest that nearshore conditions would bounce back to a lake-wide average SRP concentration of 1.6 $\mu\text{g/L}$ after 7 days. Again, these scenarios focus only on Jones Ditch loading and no algal uptake.

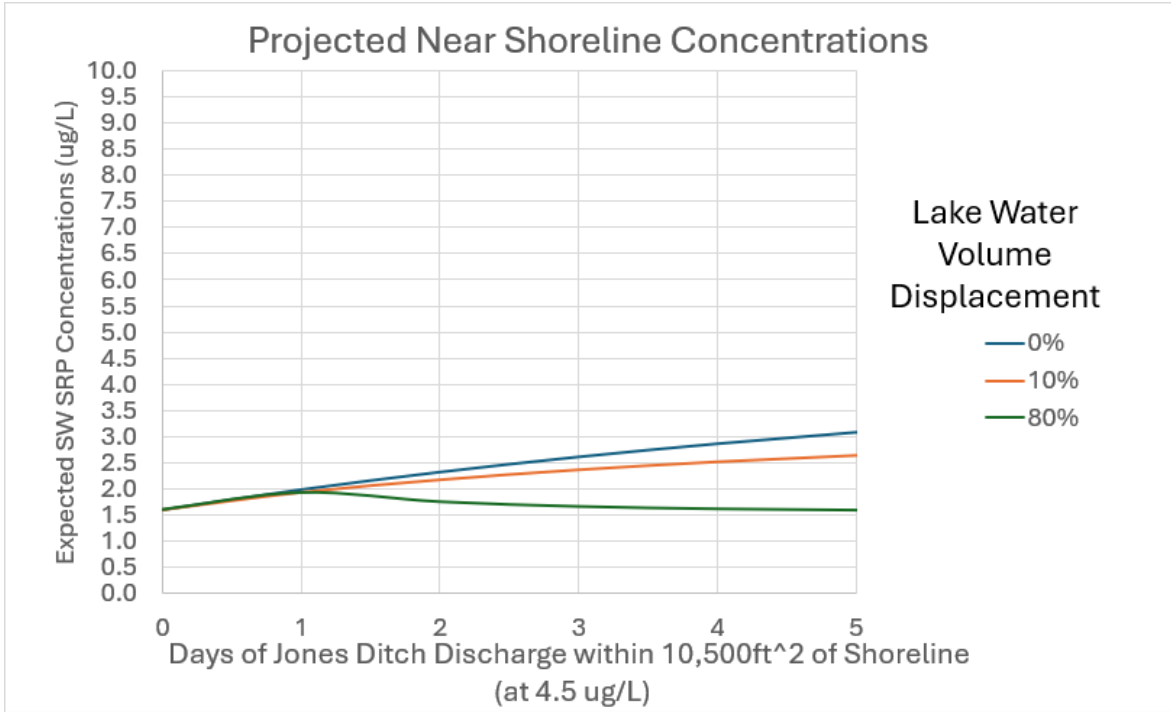


Figure F-2. Hypothetical 5-day nearshore concentrations with Jones Ditch loading to the nearshore mixing zone.

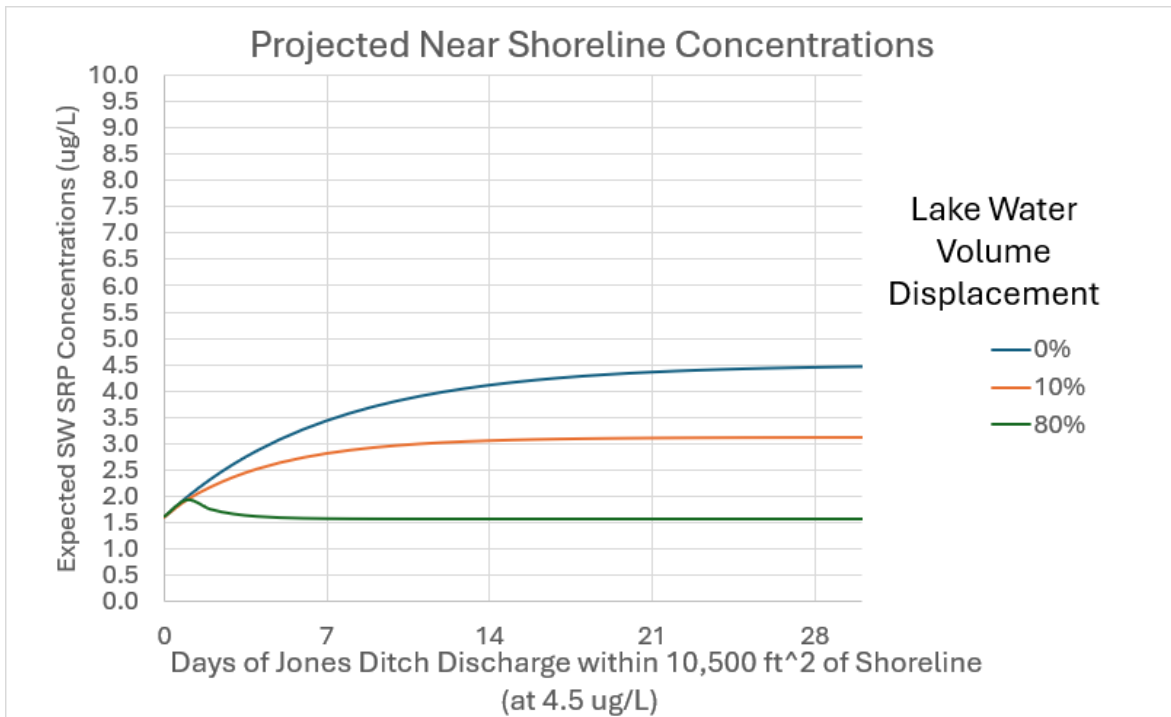


Figure F-3. Hypothetical 30-day nearshore concentrations with Jones Ditch loading to the nearshore mixing zone.

Summary

The short-term (5-day) hypothetical loading conditions (Figure F-2) could be considered representative of likely episodic mixing conditions typically experienced along the lakeshore, ranging from light wind to heavy wind mixing. For five days leading up to the August 27, 2025 sampling, winds were predominantly from the west. As reported in the main body of this memorandum, a wind shadow effect from the treed shoreline likely diminished substantial nearshore mixing before and during the sampling event. If hypothetically, there was 0% mixing under these conditions at the time of sampling, then Jones Ditch loading could have resulted in the 3.2 ug/L average mixing zone SRP concentration. This would suggest Jones Ditch could be the sole source of phosphorus, if negating uptake of soluble phosphorus by luxuriant algal growths in the suspect nearshore area, as well as any mixing.

With 10% light mixing under the 5-day scenario, the measured average nearshore concentration does not appear achievable with the ditch as the sole source of phosphorus. Given the high level of expected algal uptake in the suspect nearshore area, it could be postulated that SRP concentrations would be higher in the absence of these growths. This would further suggest other P sources to the nearshore, given that simulated P loading from only Jones Ditch falls short of generating the measured average nearshore mixing zone P levels.

The 30-day simulations might also suggest that Jones Ditch is not the sole source of P to nearshore waters. Lake water circulation over this length of time likely falls between the 10-80% mixing zone conditions such that Jones Ditch loads at this time of the year might not be sufficient to generate measured nearshore phosphorus concentrations.

Jones Ditch flow logger data established as part of the ongoing CLIB lake level monitoring program have not yet been retrieved for 2025. Nearshore SRP concentrations in the targeted nearshore zone ranged from 4-7 ug/L, averaging 5.5 ug/L on July 2, 2025. These are higher levels than noted on August 27th. Higher ditch flows could have been occurring during the July sampling; thus, these will be checked when logger data are retrieved by late November, 2025 to similarly consider Jones as the possible sole source of P to these nearshore areas.

Overall, this hypothetical modeling of Jones Ditch SRP loading impacts suggests there may be other sources of nearshore phosphorus. Sediment phosphorus release is not considered as one of these, leaving open the possibility of septic system discharges. Shallow groundwater sampling along the shoreline at the nearshore suspect location would confirm or refute the notion septic system discharges to the lake. Such sampling should include both SRP and bacteria.

Subject: SRP Data with Bacterial Results for November GW Sampling
Date: Tuesday, December 9, 2025 at 6:55:30 AM Eastern Standard Time
From: Mark Kieser <mkieser@kieser-associates.com>
To: Rex Vaughn <rvaughn@tir.com>
CC: John Jacobson <j.jacobson@kieser-associates.com>
Attachments: image.png, 3K112425FINALmm (1).pdf

Rex,

Attached is the GLEC lab report I received yesterday for SRP. Below, these additional data are summarized with bacteria results.

SampleDescription	SRP (ug/L)	E. coli (CFU/100ml)	Total Coliform (CFU/100ml)
Temporary GW-1	10.2	ND	40
Temporary GW-2	5.3	ND	32
Temporary GW-3	3.5	1	30
Temporary GW-4	2.9	4	24
Temporary GW-5	30.4	ND	83
Temporary GW-6	13	ND	2

SRP is elevated in the last two temporary GW wells to the south. These tend to correspond to the area downgradient of the old, cobbled together septic "system" from the old cottage torn down a few years ago (as described by the homeowner). Our Black Lake sampling suggests older systems, used seasonally, can fully flush in the springtime where there is coarse sandy material in the shallow aquifer. In other settings with tighter soils, literature suggests that disconnected septic systems can continue to leach phosphorus up to 40 years.

Based on our knowledge of local soils and field observations, I currently believe the two highest SRP levels are legacy discharges from the old system where the connection to drain field was disconnected from the house, but not removed. This previous system was about 50 feet from the shoreline. Notably, the area of luxuriant algal growth is just offshore for these two higher concentrations. I will have John re-run the nearshore model with this 50-foot wide area of higher SRP levels to see if this might make up the gap noted in background P levels and Jones Ditch inputs in relation to August nearshore P concentrations.

There does not appear to be active septic system discharges from either of the two newer residential septic systems near this shoreline. The high nearshore surface water bacterial

levels I now suspect may be waterfowl given the homeowner's description of heavy goose congregations at his shoreline per my on-site conversation. Jones ditch may also be contributing bacteria. Moreover, filamentous algae can hold, even in some cases, propagate *E. coli* bacterial growth. These can all be factors in the August nearshore bacterial levels noted at this nearshore location just south of Jones Ditch.

Sampling of Jones Ditch in 2026 when flowing should be part of spring-time monitoring efforts for SRP, bacterial sampling and DNA testing (for beaver and human-related bacteria). As for DNA testing of November 2025 shallow GW samples, I will recommend GLEC analyze samples from GW-4 and GW-5. These would be for human and goose DNA. Beaver DNA testing would not be applicable for these groundwater samples.

We are preparing a short technical brief on November findings of groundwater testing. We should have this completed in a few weeks. I will otherwise be prepared to discuss this information at the CLIB meeting this Friday, 12-12-25. Call with questions.

Regards,
Mark

Mark S. Kieser
Senior Scientist
Kieser & Associates, LLC
536 E. Michigan Ave., Suite 300
Kalamazoo, MI 49007
Phone: 269-344-7117
Cell: 269-217-6372
mkieser@kieser-associates.com
kieser-associates.com



Great Lakes Environmental Center

Project Number: 2592-B10

December 5, 2025

**Kieser & Associates-Cedar Lake
536 E. Michigan Ave., Suite 300
Kalamazoo, MI 49007**

Attention: Mark Kieser

Project Description: Water Quality Sampling

Dear Client,

Enclosed is a copy of your laboratory report relating to samples, as they were received. All tests were performed within the maximum holding times and have met or exceeded QC criteria. Test results are in compliance with The NELAC Institute Standards. Visit our web site for a full list of tests for which GLEC (Lab 2059) is accredited through the New Hampshire Environmental Laboratory Accreditation Program (NH ELAP).

Please don't hesitate to call if you have questions or require further information.

Sincerely,

**Michelle A. Moore
Laboratory Coordinator and Research Scientist/Nutrient Chemistry**



Great Lakes Environmental Center

739 Hastings St., Traverse City MI 49686 - (231) 941-2230 - FAX: (231) 941-2240

Client ID: 2592-B10

Kieser-Cedar Lake

REPORT OF ANALYSIS

Soluble Reactive Phosphorus

<u>Lab ID</u>	<u>Sample Description</u>	<u>Sample Date</u>	<u>Result</u>	<u>Units</u>	<u>Rep Limit</u>	<u>MDL</u>	<u>Qualifier</u>	<u>Analysis Date</u>	<u>Comments</u>	<u>Initials</u>
3K112400056	Temporary GW-1	11/24/2025	0.0102	mg/L	0.001	0.00047		11/26/2025		BSC
3K112400057	Temporary GW-2	11/24/2025	0.0053	mg/L	0.001	0.00047		11/26/2025		BSC
3K112400058	Temporary GW-3	11/24/2025	0.0035	mg/L	0.001	0.00047		11/26/2025		BSC
3K112400059	Temporary GW-4	11/24/2025	0.0029	mg/L	0.001	0.00047		11/26/2025		BSC
3K112400060	Temporary GW-5	11/24/2025	0.0304	mg/L	0.004	0.00188		11/26/2025		BSC
3K112400061	Temporary GW-6	11/24/2025	0.0130	mg/L	0.001	0.00047		11/26/2025		BSC

LabQualifiers:

U - Analyte not detected.

J - Result between MDL and RL should be considered estimated.

Page 1 of 1

Friday, December 05, 2025

Method:

SM 4500-P F

Subject: Re: [EXTERNAL] Re: Draft - Small Grants Application - Cedar Lake Improvement Board
Date: Monday, December 8, 2025 at 9:03:25 AM Eastern Standard Time
From: Chiotti, Justin <justin_chiotti@fws.gov>
To: Rex Vaughn <rvaughn@tir.com>
CC: Mark Kieser <mkieser@kieser-associates.com>
Attachments: Approval Process Status_Cedar Lake 12.8.25.png

Good morning Rex!

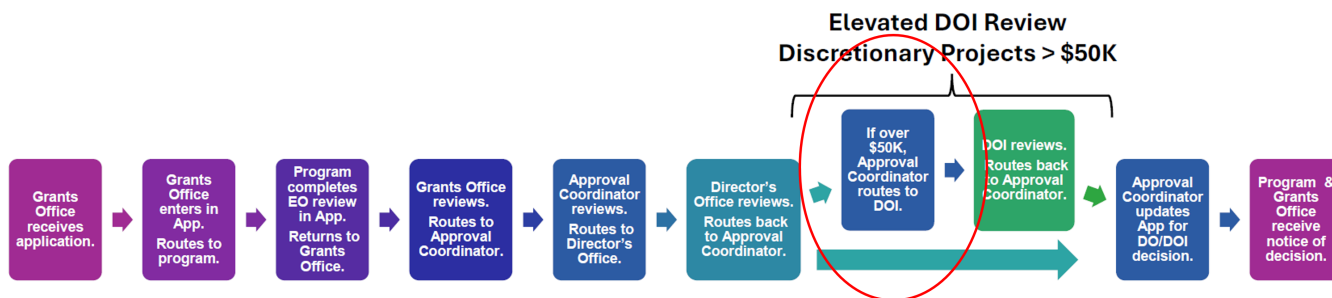
If the weather keeps up like this I am sure there will be plenty of ice fishing on Cedar Lake this year.

We have submitted all of the required documents for the small grants application. Currently your project is nearing the elevated DOI review process. The administration has required that all new awards >\$50 K receive an elevated review to ensure they comply with presidential executive orders. This process has been taking some time (weeks) to complete. As soon as I hear anything new, I will make sure I pass it along. I attached a schematic of the review process. The red circle is where your project currently is in the process.

Let me know if you need anything else or have additional questions.

Thanks,
Justin

FWS Financial Assistance Approval Process



Office of
CONSERVATION
INVESTMENT

Partnering to fund conservation and connect people with nature.

--
Justin Chiotti
Habitat Biologist
USFWS - Fish and Aquatic Conservation Program
Region 3 - Midwest Regional Office
Phone: (248) 891-0087 | justin_chiotti@fws.gov

From: Rex Vaughn <rvaughn@tir.com>
Sent: Sunday, December 7, 2025 5:13 PM
To: Chiotti, Justin <justin_chiotti@fws.gov>
Cc: Mark Kieser <mkieser@kieser-associates.com>
Subject: Re: [EXTERNAL] Re: Draft - Small Grants Application - Cedar Lake Improvement Board

Justin:

I've got a regularly scheduled Cedar Lake Improvement Board meeting on Friday, Dec. 12, 2025. I was hoping to have some news on the grant to include on our agenda. Got anything for us? Please let me know.

December 8, 2025

Mr. Rex Vaughn, Chairman
Cedar Lake Improvement Board
P.O. Box 53
Greenbush, MI 48738

We are pleased to confirm our understanding of the services we are to provide Cedar Lake Improvement Board for the year ended December 31, 2025.

Audit Scope and Objectives

We will audit the financial statements of the governmental activities, and each major fund, and the disclosures, which collectively comprise the basic financial statements of Cedar Lake Improvement Board as of and for the year ended December 31, 2025. Accounting standards generally accepted in the United States of America (GAAP) provide for certain required supplementary information (RSI), such as management's discussion and analysis (MD&A), to supplement the Cedar Lake Improvement Board's basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the Cedar Lake Improvement Board's RSI in accordance with auditing standards generally accepted in the United States of America (GAAS). These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient appropriate evidence to express an opinion or provide any assurance. The following RSI is required by GAAP and will be subjected to certain limited procedures, but will not be audited:

- 1) Management's Discussion and Analysis; and
- 2) Budgetary Comparison Schedules.

The objectives of our audit are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error; issue an auditor's report that includes our opinion about whether your financial statements are fairly presented, in all material respects, in conformity with GAAP; and report on the fairness of the supplementary information referred to in the second paragraph when considered in relation to the financial statements as a whole. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. Misstatements, including omissions, can arise from fraud or error and are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment of a reasonable user made based on the financial statements.

Auditor's Responsibilities for the Audit of the Financial Statements

We will conduct our audit in accordance with GAAS and will include tests of your accounting records and other procedures we consider necessary to enable us to express such opinions. As part of an audit in accordance with GAAS, we exercise professional judgment and maintain professional skepticism throughout the audit.

We will evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management. We will also evaluate the overall presentation of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the government or to acts by management or employees acting on behalf of the government.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is an unavoidable risk that some material misstatements may not be detected by us, even though the audit is properly planned and performed in accordance with GAAS. In addition, an audit is not designed to detect immaterial misstatements, or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. However, we will inform the appropriate level of management of any material errors, fraudulent financial reporting, or misappropriation of assets that comes to our attention. We will also inform the appropriate level of management of any violations of laws or governmental regulations that come to our attention, unless clearly inconsequential. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

In connection with this engagement, we may communicate with you or others via email transmission. As emails can be intercepted and read, disclosed, or otherwise used or communicated by an unintended third party, or may not be delivered to each of the parties to whom they are directed and only to such parties, we cannot guarantee or warrant that emails from us will be properly delivered and read only by the addressee. Therefore, we specifically disclaim and waive any liability or responsibility whatsoever for interception or unintentional disclosure of emails transmitted by us in connection with the performance of this engagement. In that regard, you agree that we shall have no liability for any loss or damage to any person or entity resulting from the use of email transmissions, including any consequential, incidental, direct, indirect, or special damages, such as loss of revenues or anticipated profits, or disclosure or communication of confidential or proprietary information.

We will also conclude, based on the audit evidence obtained, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the government's ability to continue as a going concern for a reasonable period of time.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and may include tests of the physical existence of inventories, and direct confirmation of receivables and certain assets and liabilities by correspondence with selected customers, creditors, and financial institutions. We may request written representations from your attorneys as part of the engagement, and they may bill you for their response to this inquiry.

Audit Procedures—Internal Control

We will obtain an understanding of the government and its environment, including the system of internal control, sufficient to identify and assess the risks of material misstatement of the financial statements, whether due to error or fraud, and to design and perform audit procedures responsive to those risks and obtain evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from

fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentation, or the override of internal control. An audit is not designed to provide assurance on internal control or to identify deficiencies in internal control. Accordingly, we will express no such opinion. However, during the audit, we will communicate to management and those charged with governance internal control related matters that are required to be communicated under AICPA professional standards.

Audit Procedures—Compliance

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the Cedar Lake Improvement Board's compliance with the provisions of applicable laws, regulations, contracts, and agreements. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion.

Responsibilities of Management for the Financial Statements

Our audit will be conducted on the basis that you acknowledge and understand your responsibility for designing, implementing, and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error, including monitoring ongoing activities; for the selection and application of accounting principles; and for the preparation and fair presentation of the financial statements in conformity with accounting principles generally accepted in the United States of America with those oversight of those charged with governance.

Management is responsible for making drafts of financial statements, all financial records, and related information available to us; for the accuracy and completeness of that information (including information from outside of the general and subsidiary ledgers); and for the evaluation of whether there are any conditions or events, considered in the aggregate, that raise substantial doubt about the government's ability to continue as a going concern for the 12 months after the financial statements date or shortly thereafter (for example, within an additional three months if currently known). You are also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, identification of all related parties and all related-party relationships and transactions, and other matters; (2) additional information that we may request for the purpose of the audit; and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence. At the conclusion of our audit, we will require certain written representations from you about the financial statements and related matters.

Your responsibilities include adjusting the financial statements to correct material misstatements and confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements of each opinion unit taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the government involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the government received in communications from employees, former employees, grantors, regulators, or others. In addition, you are responsible for identifying and ensuring that the government complies with applicable laws and regulations.

With regard to publishing the financial statements on your website, you understand that websites are a means of distributing information and, therefore, we are not required to read the information contained in those sites or to consider the consistency of other information on the website with the original document.

Other Services

We will also assist in preparing the financial statements, assist with year-end closing adjustments, year-end budget review, and assist in maintaining the capital asset schedule of the Cedar Lake Improvement Board in conformity with accounting principles generally accepted in the United States of America based on information provided by you.

We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services previously defined. We, in our sole professional judgment, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities.

You agree to assume all management responsibilities for the financial statement preparation services and any other nonattest services we provide; oversee the services by designating an individual, preferably from senior management, with suitable skill, knowledge, or experience; evaluate the adequacy and results of the services; and accept responsibility for them.

Engagement Administration, Fees, and Other

We understand that your employees will prepare all cash, accounts receivable, or other confirmations and schedules we request and will locate any documents selected by us for testing. We will schedule the engagement based in part on deadlines, working conditions, and the availability of your key personnel. We will plan the engagement based on the assumption that your personnel will cooperate and provide assistance by performing tasks such as preparing requested schedules, retrieving supporting documents, and preparing confirmations. If, for whatever reason, your personnel are unavailable to provide the necessary assistance in a timely manner, it may substantially increase the work we have to do to complete the engagement within the established deadlines, resulting in an increase in fees over our original fee estimate.

The audit documentation for this engagement is the property of Straley Lamp & Kraenzlein P.C. and constitutes confidential information. However, subject to applicable laws and regulations, audit documentation and appropriate individuals will be made available upon request and in a timely manner to State of Michigan or its designee. We will notify you of any such request. If requested, access to such audit documentation will be provided under the supervision of Straley Lamp & Kraenzlein P.C. personnel. Furthermore, upon request, we may provide copies of selected audit documentation to State of Michigan or its designee. The State of Michigan or its designee may intend or decide to distribute the copies or information contained therein to others, including other governmental agencies.

Nicholas L. Cordes, CPA is the engagement partner and is responsible for supervising the engagement and signing the reports or authorizing another individual to sign them. We will discuss with you an agreeable time to begin our audit work and prepare the financial statements as soon as reasonably possible thereafter.

Our fee for services will be at our standard hourly rates plus out-of-pocket costs (such as report reproduction, word processing, postage, travel, copies, telephone, confirmation service provider fees, etc.) except that we agree that our gross fee, including expenses, will not exceed \$3,500. In addition, for fiscal years beginning after December 15, 2023, the implementation of the Governmental Accounting Standards Board Statement No. 101, *Compensated Absences*, is required. The implementation is the responsibility of management; however, we will assist with the implementation as a nonattest service if requested. This service is not included as part of the audit and, accordingly, this service will be invoiced at standard hourly rates. We do request advance notice of this request a minimum of 90 days prior to the onset of audit fieldwork. Our standard hourly rates vary according to the degree of responsibility involved and the experience level of the personnel assigned to your audit. Our invoices for these fees will be rendered each month as work progresses and are payable upon presentation. In accordance with our firm policies, work may be suspended if your account becomes 30 days or more overdue and may not be resumed until your account is paid in full. If we elect to terminate our services for nonpayment, our engagement will be deemed to have

been completed upon written notification or termination, even if we have not completed our report. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination. The above fee is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs.

Reporting

We will issue a written report upon completion of our audit of the Cedar Lake Improvement Board's financial statements. Our report will be addressed to management and those charged with governance of the Cedar Lake Improvement Board. Circumstances may arise in which our report may differ from its expected form and content based on the results of our audit. Depending on the nature of these circumstances, it may be necessary for us to modify our opinions, add a separate section, or add an emphasis-of-matter or other-matter paragraph to our auditor's report, or if necessary, withdraw from this engagement. If our opinions are other than unmodified, we will discuss the reasons with you in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed opinions, we may decline to express opinions or withdraw from this engagement.

We appreciate the opportunity to be of service to the Cedar Lake Improvement Board and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign the enclosed copy and return it to us.

Very truly yours,



Nicholas L. Cordes, CPA

RESPONSE:

This letter correctly sets forth the understanding of Cedar Lake Improvement Board.

By: _____

Title: _____

Date: _____

536 E. Michigan Avenue
Suite 300
Kalamazoo, MI 49007

Invoice

DATE	INVOICE #
12/2/2025	25-187

BILL TO:

Cedar Lake Improvement Bd.
C/o Rex Vaughn
PO Box 53
Greenbush, MI 48738

DESCRIPTION	QTY	P.O. NO.	TERMS
		2025-2026 Budget	Net 30
DESCRIPTION	QTY	RATE	AMOUNT
Senior Scientist/ Principal - Task 2	0.5	205.00	102.50
Project Manager - Task 2	0.25	80.00	20.00
Senior Scientist/ Principal - Task 5a	0.75	205.00	153.75
Project Scientist III - Task 5a	19	70.00	1,330.00
Project Manager - Task 5a	23.5	80.00	1,880.00
Mileage to/from Cedar Lake, 11/24-11/25/25 - Task 5a	520	0.70	364.00
AmericInn 11/24-11/25, 2 Rooms - Task 5a		177.84	177.84
Senior Scientist/ Principal - Task: Nearshore Sampling	29.75	205.00	6,098.75
Professional Engineer - Task: Nearshore Sampling	3.5	165.00	577.50
Project Manager - Task: Nearshore Sampling	6.25	80.00	500.00
GLEC Labs - Inv.#: 35854, 10/08/25 - Nearshore Sampling		1,628.00	1,628.00
Senior Scientist/ Principal - Task: Shallow GW Sampling	16	205.00	3,280.00
Mileage- Traverse City to Cedar, 11/24/25 - Task: Shallow GW Sampling	240	0.70	168.00
AmericInn - M.Kieser, 11/25/25 - Task: Shallow GW Sampling		77.98	77.98
Lowes, Poly Tubing for Sampling - Task: Shallow GW Sampling		25.20	25.20
Party & Food, 11/24/25 - Ice for Samples - Task: Shallow GW Sampling		2.99	2.99
Curran EZ Mart, 11/24 - Lunch, M Kieser - Task: Shallow GW Sampling		11.64	11.64
Enviro Lab - Invoice #004302, Samples - Task: Shallow GW Sampling		210.00	210.00
This invoice is for professional services rendered through November 30, 2025, as related to Cedar Lake Improvement Bd., 2025-2026 Budget.			
		Total	USD 16,608.15

Please remit payment to Kieser & Associates, LLC
For questions, please contact Becky Hough.

Phone #	Fax #
(269) 344-7117	(269) 344-2493

Kieser & Associates, LLC
Time by Job Detail
October 1, 2025 - November 30, 2025

Cedar Lake Improvement Bd. (2025-2026)	Date	Name	Duration	Cost	Notes
Cedar Lake Improvement Bd. (2025-2026): Task 2 - CLIB Coordination					
	10/06/2025	Kieser, Mark	0.50	102.50	Call with Rex
	11/18/2025	Crum, Natalie	0.25	20.00	Updating website
Total - Cedar Lake Improvement Bd. (2025-2026): Task 2:			0.75	122.50	
 Cedar Lake Improvement Bd. (2025-2026): Task 5a - Hydrology-Logger Maint+ 2 Visit					
	11/26/2025	Kieser, Mark	0.75	153.75	Logger retrieval information
	11/24/2025	Alhinaai, Marwan	9.25	647.50	site visit + retrieve loggers, + travel
	11/24/2025	Alhinaai, Marwan	2.00	140.00	Logger Downloads
	11/25/2025	Alhinaai, Marwan	7.75	542.50	site visit + logger retrieval
	11/07/2025	Crum, Natalie	0.25	20.00	Scheduling and coordination for November logger retrieval
	11/21/2025	Crum, Natalie	1.50	120.00	Prepping for logger retrieval
	11/24/2025	Crum, Natalie	9.25	740.00	November Logger Retrieval
	11/25/2025	Crum, Natalie	7.75	620.00	November Logger Retrieval
	11/26/2025	Crum, Natalie	4.75	380.00	Downloading data and equipment management
	11/24 & 11/25	Mileage		364.00	Mileage to/from Cedar Lake - Approx. 520 Miles
	11/25/2025	AmericInn		177.84	Two (2) hotel rooms, 11-24 to 11-25-25, N. Crum & M. Alhinaai
Total Cedar Lake Improvement Bd. (2025-2026): Task 5a:			43.25	3,905.59	
 Cedar Lake Improvement Bd. (2025-2026): Task: Nearshore Sampling					
	10/01/2025	Kieser, Mark	0.25	51.25	Coord. for CLIB meeting presentation on results
	10/06/2025	Kieser, Mark	2.00	410.00	Data analysis with Marwan
	10/07/2025	Kieser, Mark	1.75	358.75	Reporting on findings
	10/08/2025	Kieser, Mark	2.25	461.25	Vegetation data maps/analysis/ Jones Flows
	10/09/2025	Kieser, Mark	2.25	461.25	Data analysis/ reporting
	10/10/2025	Kieser, Mark	2.00	410.00	Call participation on bacteria/ SRP sampling
	10/18/2025	Kieser, Mark	1.25	256.25	Reporting; ditch flow analysis
	10/22/2025	Kieser, Mark	0.50	102.50	Sampling results mapping review
	11/03/2025	Kieser, Mark	0.50	102.50	Time on phone with Rex on data reporting
	11/04/2025	Kieser, Mark	3.00	615.00	Reporting and call with Rex
	11/05/2025	Kieser, Mark	2.50	512.50	report, and nearshore loading assessment

Kieser & Associates, LLC
Time by Job Detail
October 1, 2025 - November 30, 2025

Cedar Lake Improvement Bd. (2025-2026)	Date	Name	Duration	Cost	Notes
	11/14/2025	Kieser, Mark	0.75	153.75	Chara P uptake considerations
	11/14/2025	Kieser, Mark	3.50	717.50	Final memo drafting
	11/17/2025	Kieser, Mark	3.75	768.75	Final memo drafting
	11/18/2025	Kieser, Mark	3.50	717.50	Finalize memo/ coord. with Rex
	10/09/2025	Jacobson, John	2.00	330.00	Jone Ditch flow calculations
	11/05/2025	Jacobson, John	1.50	247.50	Cedar Lake - Nearshore Phosphorus Model
	10/07/2025	Crum, Natalie	3.50	280.00	prepping mapping and coverage analyses for E. coli reporting
	10/08/2025	Crum, Natalie	0.25	20.00	Sending 2025 LakeScan data for reporting
	10/09/2025	Crum, Natalie	1.00	80.00	Sending 2025 LakeScan data for reporting
	10/10/2025	Crum, Natalie	1.50	120.00	Prepping for and attending meeting
	10/08/2025	GLEC Labs		1628.00	GLEC Labs Invoice #: 35854, Dated 9/30/25, Received: 10/8/25
Total - Task: Cedar Lake Improvement Bd. (2025-2026) - Nearshore Sampling:			39.50	8,804.25	
 Cedar Lake Improvement Bd. (2025-2026): Task: Shallow GW Sampling \$5K					
	11/18/2025	Kieser, Mark	0.75	153.75	Preparations for additional monitoring & PCR/Site
	11/19/2025	Kieser, Mark	1.00	205.00	Coord. w/ GLEC on PCR/Sampling coordination
	11/20/2025	Kieser, Mark	1.50	307.50	Sampling coord. with Rex and labs
	11/24/2025	Kieser, Mark	8.00	1640.00	Nearshore GW sampling and travel to labs
	11/25/2025	Kieser, Mark	1.25	256.25	Data processing & call with Rex
	11/26/2025	Kieser, Mark	0.75	153.75	Review of CI and conductivity results & E.coli coord.
	11/29/2025	Kieser, Mark	1.50	307.50	Review of E.coli data and goose loading review
	11/30/2025	Kieser, Mark	1.25	256.25	Results follow-up with Rex
	11/24/2025	Mileage		168.00	M. Kieser RT Milage, Traverse City to Cedar, 11/24/25, 240 Miles
	11/25/2025	AmericInn		77.98	One (1) hotel room 11/24 - Mark Kieser
	11/23/2025	Lowe's		25.20	Poly Tubing - 60 Feet at .42 per foot for sampling
	11/24/2025	Party & Food		2.99	Ice for Samples
	11/24/2025	Curran EZ Mart		11.64	Lunch, M. Kieser
	11/26/2025	Enviro Lab		210.00	Invoice #004302
Total Cedar Lake Improvement Bd. (2025-2026): Task: Shallow GW Sampling:			16.00	3,775.81	
 TOTAL: CEDAR LAKE IMPROVEMENT BD. (2025-2026):			99.50	16,608.15	



Great Lakes Environmental Center, Inc.
 Applied Environmental Sciences
 231 941-2230 231 941-2240 fax

KIESER & ASSOCIATES, LLC
 JOSH KIESER
 536 E. MICHIGAN AVE
 SUITE 300
 KALAMAZOO, MI 49007

Invoice Number: **35854**
 Date: **09/30/2025**

Project: **2592 KIESER & ASSOCIATES, LLC**
 PO#:

For Professional Services Performed During September

Date Sample Received: September 2, 2025

GLEC #: 3K00012-00055

CEDAR LAKE BILLING

	<i>Units</i>	<i>Rate</i>	<i>Amount</i>
TP - Total Phosphorus Tests	22	34.00	748.00
Low Level SRP-Soluble Reactive Phosphorus Tests	22	40.00	880.00
			Total Invoice Amount: \$1,628.00

Approved by:

MICHELLE A. MOORE

PAYMENT DUE UPON RECEIPT OF INVOICE
 REMIT TO: Great Lakes Environmental Center, Inc.
 739 Hastings Street, Traverse City, MI 49686

Becky Hough

From: Priceline <info@travel.priceline.com>
Sent: Monday, November 17, 2025 3:29 PM
To: Becky Hough
Subject: Your hotel receipt from Priceline (Trip #: 208-003-483-96)

priceline[®]

Your hotel on Monday, Nov 24th, 2025 is confirmed

Priceline Trip Number: 208-003-483-96



AmericInn by Wyndham Oscoda Near AuSable River

Nov 24 – Nov 25 · Check-in: after 3:00 PM

Confirmation Number:

6379211235, 6379211235



Get help with your trip, discover local experiences, and more!

[Chat with Penny](#)



[Manage Your Booking](#)

Payment Summary

Priceline trip number	208-003-483-96
Purchase date	Nov 17, 2025
Payment method	Visa (6563)
Billing name	Mark Kieser

Hotel subtotal	\$160.20
----------------	----------

Price per night	\$80.10
Number of nights	1
Number of rooms	2
Taxes and fees	\$17.64

Total charged **\$177.84**



Hotels



Flights



Bundle + Save



Cars



Cruises



Experiences



Download the App

Follow Us



INVOICE

Enviro Lab Services
4150 Arrow St
Oscoda, MI 48750-1561

travis@envirolabusa.com
+1 (989) 820-2339
www.envirolabservice.com



Enviro
Lab Services

Kieser & Associates, LLC.

Bill to

Mr. Josh Keiser
536 E. Michigan Ave.
Suite 300
Kalamazoo, MI 49007

Ship to

Mr. Josh Keiser
536 E. Michigan Ave.
Suite 300
Kalamazoo, MI 49007

Invoice details

Invoice no.: #004302
Terms: Net 30
Invoice date: 11/26/2025
Due date: 12/26/2025

#	Product or service	Description	Qty	Rate	Amount
1.	L-030 E. Coli/Coliform Test	Open water E.Coli and Coliform Enumeration	7	\$30.00	\$210.00

Total **\$210.00**

Ways to pay



View and pay

*Cedar Lake
Task: Extra Plus*

Cedar - hunch
 Welcome To *Travel to*
 Curran EZ Mart #380 *GLEC*
 2541 M 65 *Lab*
 Curran, MI 48728
 (989) 848-2344

 VeriFone Gold Disk
 FL

Description	Qty	Amount
T 3PC CHIX MEAL	1	8.99
T CHIX LEG	1	1.99
Subtotal		10.98
Tax		0.66
TOTAL		11.64
CREDIT \$		11.64

Tax Type	Purchase	Rebate	Taxable	Tax
T(6.000%)	10.98	0.00	10.98	0.66

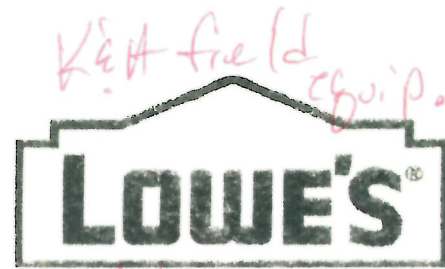
SALE Receipt
 US DEBIT USD\$11.64
 Acct/Card #: *****2283
 Entry:Chip Read
 Auth #: 380640
 Resp Code: 000
 Stan: 0209597463
 Invoice #: 320187

PIN Bypassed

AuthNet: VISA
 MODE: Issuer
 AID: A0000000980840
 BP SITE ID: 2928968
 VISA
 CUSTOMER COPY

Thank you for shopping the
 Blarney Castle
 Family of Stores

ST#38 DR#1 TRAN#1029685
 CSH: 8 11/24/25 2:11:25 PM



Cedar Lake
\$0.42/ft
**60 =*
\$25.10 cedar Extra
 LEARN MORE AT LOWES.COM/NYLOWESREWARDS



LOWE'S HOME CENTERS, LLC
 5100 SOUTH WESTEDGE AVENUE
 PORTAGE, MI 49002 (269) 276-0215

- SALE -

SALES#: 511000B 49225/3 TRANS#: 82525011 11-23-25

879276 3/4 IN OD POLY TUBING 100	39.18	
SUBTOTAL		39.18
TOTAL TAX		2.35
INVOICE 80819 TOTAL		41.53
DEBIT/ISA		81.53
CHANGE		40.00

DEBIT/ISA: XXXXXXXXXXXX2283 AMOUNT: 81.53 AUTHID: 140985
 CNTP REF ID: 111001819519 11/23/25 09:30:52
 *PIN VERIFIED
 TRACE : 819519 RETRIEVAL: 111001819519
 PURCHASE LAST BANK TOTAL DEBIT
 41.53 40.00 81.53
 PUR : 8080048000
 TSI : 6800

STORE: 1110 TERMINAL: 01 11/23/25 09:30:59

Cedar Lake

PARTY & FOOD
 FEATURING
 PHILLY STYLE CHEESESTEAK
 AND HOAGIES TOP, TOP 5 PIZZA
 (989) 739-2091
 DATE 11/24/2025 MON
 GROCERY F \$2.99
TOTAL \$2.99
CASH \$3.00
CHANGE \$0.01
 NO. 639699 REG02 TIME 08:20

Ice

Becky Hough

From: Becky Hough
Sent: Thursday, November 20, 2025 9:56 AM
To: Mark Kieser
Subject: FW: Your hotel receipt from Priceline (Trip #: 209-671-463-95) - AmericInn by Wyndham Oscoda Nov 23 - Nov 24

From: Priceline <info@travel.priceline.com>
Sent: Thursday, November 20, 2025 9:54 AM
To: Becky Hough <bhough@kieser-associates.com>
Subject: Your hotel receipt from Priceline (Trip #: 209-671-463-95)

priceline[®]

Your hotel on Sunday, Nov 23rd, 2025 is confirmed

Priceline Trip Number: 209-671-463-95



AmericInn by Wyndham Oscoda Near AuSable River

Nov 23 – Nov 24 • Check-in: after 3:00 PM

Confirmation Number:

935738478



Get help with your trip, discover local experiences, and more!

Chat with Penny



Manage Your Booking

Payment Summary

Priceline trip number

209-671-463-95

Purchase date

Nov 20, 2025

Payment method

American Express (4008)

Billing name

Mark Kieser

Hotel subtotal

\$63.93

Price per night

\$63.93

Number of nights

1

Taxes and fees

\$14.05

Total charged

\$77.98



Hotels



Flights



Bundle + Save



Cars



Cruises



Experiences



Download the App

Follow Us

Cedar Lake Improvement May 1, 2025 - April 30, 2026 Budget								
Task/Description	Total 2025 Authorized Task Budget	INV# 25-110 to 6/30/25	INV# 25-135 to 7/31/25	INV# 25-146 to 8/31/25	INV# 25-165 to 9/30/25	INV# 25-187 to 11/30/25	TOTAL INVOICED TO DATE	Total Remaining Task \$s
Task 1a - CLIB Meetings	2,196.00						0.00	2,196.00
Task 1b - CLIB Meetings - Direct Costs	400.00						0.00	400.00
Task 2a - CLIB Coordination	3,802.00					122.50	276.25	3,525.75
Task 2b - CLIB Coordination - Direct Costs	200.00						0.00	200.00
Task 3a - Watershed Management Plan (WMP) Updates (Remaining Contract Budget)	1,565.00	437.50	307.50	1,423.75			4,782.50	-3,217.50
Task 4a - Fisheries Habitat Analysis of Lake and Tributary (Remaining Contract)	341.73		322.50				701.25	-359.52
Task 5a - Annual Hydrology Monitoring Program - Standard Logger Maint. +2 Ex Visits	6,057.00					3,905.59	3,905.59	2,151.41
Task 5b - Annual Hydrology Monitoring Program - Jones Creek Data Analysis/Options	1,560.00	811.25					1,428.75	131.25
Task 5c - Annual Hydrology Monitoring Program - Ongoing Sherman Creek Analysis	1,560.00	698.75					698.75	861.25
Task 5f - Annual Hydrology Monitoring Program - Annual Reporting	7,571.00				297.50		1,256.25	6,314.75
Task: Nearshore Sampling:	16,396.75		2,707.50	3,764.25	1,120.75	8,804.25	16,396.75	0.00
Task: Shallow GW Sampling	5,000.00					3,775.81	3,775.81	1,224.19
Total Budget:	46,649.48	1,947.50	3,337.50	5,188.00	1,418.25	16,608.15	33,221.90	13,427.58

Bloom Sluggett, PC

161 Ottawa Ave NW, Ste. 400
Grand Rapids, MI 49503
(616) 965-9340

December 4, 2025

Cedar Lake Improvement Board
Attn: Rex Vaughn, Chairperson
PO Box 53
Greenbush, MI 48738

Re: 19627-001
Cedar Lake Improvement Board

Enclosed is invoice 27499, which covers services through 11/30/2025. This invoice, dated 12/4/2025, is for \$1140.00. Prompt payment of your total balance is appreciated and is due 30 days from invoice date.

Billing Summary

Total for services rendered	\$1,140.00
Total expenses	\$0.00
Total previous balance	\$0.00
Total payments and other transactions	\$0.00
Balance Due	\$1,140.00

If you have questions, please call us at (616) 965-9340. Thank you.

Enclosure

Mike's Computer Repair

mikealsuitor@gmail.com | 989.335.3265

Customer Information

Date of Service: 12/4/25 Date of Service Start: 9/28/26
Owner / Customer: Cedar Lake Improvement Board
Address: PO Box 53
City: Greenbush State: MI Zip: 48738
Phone Number: _____ Mobile Number: 810.516.6686

Job Description \ Work Completed

Website Updates

Payment Information		Payment Details	Invoice #
Cost of Labor:	\$ <u>97</u> . <u>50</u>	Cash: \$ _____	1938
Cost of Parts:	\$ _____	Check #: _____	
Cost of Going to Residence:	\$ _____	Invoiced: Y N	
Total Cost of Repair :	\$ <u>97</u> . <u>50</u>	Miles: _____	

By signing below, I am confirming that my device is running properly upon return or setup.

Owners Signature: _____

Date: _____

Technicians Signature: Michael Suitor

Date: 12/4/25

Payable to: Michael Suitor
P.O Box 41
Lincoln, MI 48742
989.335.3265
mikealsuitor@gmail.com

Alcona County Review
P.O. Box 548 111 Lake St.
Harrisville, MI 48740
989-724-6384

Invoice

Bill To

Cedar Lake Improvement Board
P.O. Box 53
Greenbush, MI 48738

Date	Invoice #
12/31/2025	30463

Terms: Due upon receipt.

P.O. No.

Date	Description	Qty	Rate	Amount
12/03/2025	Notice of Public Hearing Sales Tax	14.5	7.25 6.00%	105.13 0.00
			Total	\$105.13

IOSCO COUNTY NEWS HERALD / OSCODA PRESS

311 S. State St
 P O Box 663
 Oscoda, MI 48730

Invoice / Statement

BILLING DATE	TERMS OF PAYMENT
12/3/25	

BILLED ACCOUNT NO.	AGENCY/CLIENT
99203325	

NAME OF AGENCY/CLIENT
Cedar Lake Improvement Board

BILLED ACCOUNT
Cedar Lake Improvement Board PO Box 53 Greenbush, MI 48738

CO-OP INVOICE

Date	Publications	Description	Size	Inches	Rate	Amount	Color	Total
12/3/25	Oscoda Press	Notice of Public Hearing	2x6.5	13	\$ 13.25	\$172.25	\$0.00	\$172.25
		MPA posting and Affidavit						\$17.50

0-30	31-60	61-90	91-120	OVER 120
\$189.75				

TOTAL NET AMOUNT DUE
\$189.75

If you desire to charge this amount to your credit card, please complete the following information and return to the address below: () Visa () Mastercard () Discover

Acct #	Address
Signature	Exp Date
	CVV2 #

PLEASE RETURN THIS PORTION WITH YOUR REMITTANCE

ACCOUNT NO.	ACCOUNT NAME	AMOUNT REMITTED
99203325	Cedar Lake Improvement Board	

REMIT TO; **Iosco County News Herald / Oscoda Press**
PO BOX 663
Oscoda, MI 48750
 Phone: 989-739-2054 Fax: 989-739-3201

Payment due upon receipt. Balances over 30 days will be subject to service charge 1-1/2% monthly-annual rate of 18%.

REMITTANCE ADVICE



Order #96503

Thank you, Rex!



HP 26X High Yield Toner - Black - Original HP LaserJet Toner Cartridge New \$188.95

Confirmed July 3 On its way July 8 Out for delivery July 8 Delivered July 8

Subtotal \$188.95 Shipping FREE Taxes \$11.34



Total USD \$200.29

Your order has been delivered

Your order has been delivered to the address you provided. If you haven't received it, or if you have any other problems, contact us.

Track order with Shop

UPS tracking number: 1ZJ74F34YW75409780

Order details

Contact information

rvaughn@tir.com

Payment method

Credit card - \$200.29

Shipping address

Rex Vaughn 3580 E Cedar Lake Dr Greenbush MI 48738 United States +18105166686

Billing address

Rex Vaughn 6295 Pinecroft Court Flint MI 48532 United States +18105166686

Shipping method

Free Standard Shipping

Order completed with shop Learn more

Need help? Contact us [Contact us](#) [Track your order](#)



sam's club™

CLUB MANAGER RHONDA
8102306700

FLINT, MI
10/22/25 12:31 1142 8291 83

0000561914	[REDACTED]	[REDACTED]
0980182332	[REDACTED]	[REDACTED]
0980044324	[REDACTED]	[REDACTED]
0980196687	HPMEGAREAM	[REDACTED]
2 AT 1 FOR 9.58		19.16 T

	SUBTOTAL	[REDACTED]
TAX 1	6 %	[REDACTED]
TAX 12	0 %	[REDACTED]
	TOTAL	[REDACTED]
SAMS CONSUMER CREDIT TEND		[REDACTED]
SAMS CONSUMER **** *		[REDACTED]
CHANGE DUE		[REDACTED]

SAMS CONSUMER CREDIT- [REDACTED] 65.56
 REVERSED SAMS CONSUMER CREDIT- [REDACTED] 748 65.56
 \$65.56 TOTAL PURCHASE

+ 6% TAX
19.16
+ 1.50

\$ 20.66
REQUEST
REIMBURSEMENT
FOR PRINTER
PAPER

ITEMS SOLD 6

TC# 6019 6298 6858 0692 4596



10/22/25 12:31

CEDAR LAKE IMPROVEMENT BOARD 2026 REGULAR MEETING SCHEDULE

PLEASE TAKE NOTICE that the Cedar Lake Improvement Board (CLIB) will hold Regular Public Meetings in 2026 according to the following schedule:

Friday, Feb. 20, 2026
Friday, April 10, 2026
Friday, July 10, 2026
Friday, Oct. 9, 2026
Friday, Dec. 11, 2026

These meetings will be held at 10:00 AM at the Greenbush Township Hall, 5039 Campbell Street, Greenbush, MI 48738. If the date, location, or time of the meeting must be changed or the meeting cancelled, notice will be given according to the Open Meetings Act.

Pursuant to ADA, individuals with disabilities may request aids/services within a reasonable time to participate in a meeting by contacting the CLIB Chairman at (810) 516-6686.

For further information, please contact the CLIB Chairman at (810) 516-6686.

From: Jeff Linderman <jlinderman437@gmail.com>

Date: Friday, October 31, 2025 at 3:36 PM

To: Rex Vaughn <rvaughn@tir.com>

Subject: Formal Freedom of Information Act Request — Communications Regarding High E. coli Test Results in Cedar Lake, Alcona County

Jeffrey Linderman

Via Email & USPS

7729 Cedar Lane
Greenbush, MI 48738
734.957.4264

Date: October 31, 2025

Cedar Lake Improvement Board

Attn: FOIA Coordinator
PO Box 53
Greenbush, MI 4873

Dear FOIA Coordinator,

This is a **formal request** made under the **Michigan Freedom of Information Act (MCL 15.231 et seq.)**. As a citizen and riparian owner, I am invoking my right to inspect and receive copies of **all written and electronic communications** in the possession or control of the **Cedar Lake Improvement Board (CLIB)** relating to the discovery of **excessively high *E. coli* and total coliform levels** in **Cedar Lake, Alcona County, Greenbush Township**, as identified during the **Cedar Lake Summer Vegetation Survey conducted in early July 2025**.

This request specifically includes, but is not limited to, all records, correspondence, memoranda, notes, text messages, and email communications exchanged **from April 1, 2025, through the present date** between CLIB and any of the following entities or their representatives:

- **Kieser & Associates (K&A)**
- **District Health Department No. 2 (DHD2)**
- **Michigan Department of Environment, Great Lakes, and Energy (EGLE)**
- **Greenbush Township**
- **Alcona County**
- **Iosco County**
- **Oscoda Township**
- **Any laboratories involved in testing**, including Great Lakes Environmental Center and Enviro Lab Services in Oscoda

This includes, but is not limited to:

1. All documents and communications referring to or discussing the **July 2, 2025 water sampling** and field screening results conducted by Kieser & Associates;
2. All communications regarding the **August 27, 2025 follow-up sampling and testing**;

3. Any correspondence, discussions, or reports regarding **the source of contamination, potential causes, or remedial actions**;
4. Any communication regarding the **pending second Kieser & Associates report** or the **authorization for DNA testing**;
5. Any internal or external communications concerning **public notification, risk to human health, or coordination with property owners or governmental agencies**.

Please note: this request seeks **all responsive materials regardless of format or device**, including official or personal email accounts, text messages, and other digital communications used for public business.

Under **MCL 15.235(2)**, you are required to respond to this request **within five (5) business days** of receipt. Should additional time be necessary, a one-time extension of not more than ten (10) business days is permitted, provided that written notice of the extension and its reason is issued as required by law.

If you contend that any portion of a record is exempt from disclosure, **you must redact only the exempt portions** and release the remainder, providing the specific legal exemption relied upon and an explanation consistent with **MCL 15.244(1)**.

Please provide the requested records in **electronic format (PDF or other searchable digital file)** and deliver them via email to jlinderman437@gmail.com.

If there are any associated costs exceeding \$50, please provide a detailed **itemized written cost estimate** before processing, in compliance with **MCL 15.234**.

This request concerns a matter of public health significance affecting Cedar Lake residents and users. Delays or incomplete responses will be viewed as a **potential violation of Michigan's FOIA statute** and may result in further formal action to compel compliance, as permitted under **MCL 15.240**.

Thank you for your prompt attention to this matter. Please confirm receipt of this request and indicate the statutory response date.

Sincerely,

Jeffrey Linderman

Riparian Owner on Cedar Lake

7729 Cedar Lane

Greenbush, MI 48738

Cedar Lake Improvement Board
P.O. Box 53
Greenbush, Michigan 48738

November 6, 2025

Mr. Jeffrey Linderman
7729 Cedar Lane
Greenbush, MI 48738
(734) 957-4264
Jlinderman437@gmail.com

Re: *Notice of 10-Business-Day Extension*

Dear Mr. Linderman:

The Cedar Lake Improvement Board ("the Board") is in receipt of your FOIA request dated October 31, 2025. This letter is to advise you that, pursuant to the Michigan Freedom of Information Act ("FOIA"), PA 442 of 1976, as amended, the Board is invoking the 10-business-day extension to respond to your FOIA request, as permitted by Section 5(2)(d) of FOIA, MCL 15.235(2)(d).

The Board requires additional time to determine the scope of the records in its possession that it may need to review to process this request, and the Board requires additional time to determine what, if any, FOIA exemptions might apply to the records which may be responsive to this request. The Board will respond to your request on or before Friday, November 21, 2025.

Sincerely,



Rex R. Vaughn
Chairman, Cedar Lake Improvement Board

cc: Via Email to Jlinderman437@gmail.com

Cedar Lake Improvement Board
P.O. Box 53
Greenbush, Michigan 48738

November 20, 2025

Mr. Jeffrey Linderman
7729 Cedar Lane
Greenbush, MI 48738
(734) 957-4264
Jlinderman437@gmail.com

Re: *Response to the FOIA Request (October 31, 2025)*

Dear Mr. Linderman:

The Cedar Lake Improvement Board (the "Board") received your written request, dated October 31, 2025, under the Michigan Freedom of Information Act ("FOIA"), PA 442 of 1976, as amended. This letter responds to your FOIA request. As you will recall, the Board previously invoked the 10-business-day extension as permitted under FOIA. Specifically, the Board responds to your FOIA request as follows:

Request: As a citizen and riparian owner, I am invoking my right to inspect and receive copies of all written and electronic communications in the possession or control of the Cedar Lake Improvement Board (CLIB) relating to the discovery of excessively high E. coli and total coliform levels in Cedar Lake, Alcona County, Greenbush Township, as identified during the Cedar Lake Summer Vegetation Survey conducted in early July 2025.

This request specifically includes, but is not limited to, all records, correspondence, memoranda, notes, text messages, and email communications exchanged from April 1, 2025, through the present date between CLIB and any of the following entities or their representatives:

- **Kieser & Associates (K&A)**
- **District Health Department No. 2 (DHD2)**
- **Michigan Department of Environment, Great Lakes, and Energy (EGLE)**
- **Greenbush Township**
- **Alcona County**
- **Iosco County**
- **Oscoda Township**
- **Any laboratories involved in testing, including Great Lakes Environmental Center and Enviro Lab Services in Oscoda**

This includes, but is not limited to:

1. **All documents and communications referring to or discussing the July 2, 2025, water sampling and field screening results conducted by Kieser & Associates;**

2. **All communications regarding the August 27, 2025, follow-up sampling and testing;**
3. **Any correspondence, discussions, or reports regarding the source of contamination, potential causes, or remedial actions;**
4. **Any communication regarding the pending second Kieser & Associates report or the authorization for DNA testing;**
5. **Any internal or external communications concerning public notification, risk to human health, or coordination with property owners or governmental agencies.**

Response: This request is GRANTED in part and DENIED in part. This request is granted in part, to the extent the Board possesses any non-exempt public records that are reasonably responsive to this request. This request is denied in part to the extent that the Board does not possess any public records that are reasonably responsive to one or more of the specific line items set forth in the request, but the specific line items for which no responsive public records exist will not be known until the Board's records have been assembled and examined—at which time the Board will certify to the lack of responsive public records. This request is further denied in part to the extent that any one or more responsive public records are covered (in whole or in part) by any exemption under the FOIA, including but not limited to the personal privacy exemption (MCL 15.243(1)(a)), the attorney work-product exemption (MCL 15.243(1)(d)), the attorney-client privilege exemption (MCL 15.243(1)(g)), and the advisory communications exemption (MCL 15.243(1)(m)). The Board reserves the right to rely upon all such additional exemptions when all the responsive public records have been identified and examined.

Some of the public records responsive to your request can be found (at present) on the Board's websites, at: <https://cedarlakeib.org/meetings/> and at <https://cedarlakewmp.net/monitoring-reports>.

Given the broad nature of your request and the fact that the Board does not employ any paid staff members capable of fulfilling this request, it will take the Board a significant amount of time to compile and review the documents responsive to this request, including the separation of any exempt from non-exempt public records. Therefore, the Board estimates that it will take the Board until approximately January 31, 2026, to fulfill your FOIA request.

Notice of Rights

If you disagree with the Board's response regarding this matter, pursuant to FOIA, you are hereby advised and put on notice of your rights to do either of the following:

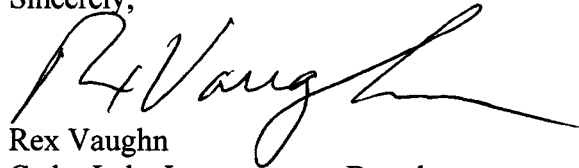
- (1) You can submit a written appeal to the Lake Board. That appeal must be in writing, must contain the word "appeal," and must identify the reason or reasons for the reversal of the disclosure denial.

(2) You may seek judicial review of the denial under Section 10 of FOIA. You are further advised of the right to receive attorney fees and damages as provided in Section 10 of FOIA if, after judicial review, the Circuit Court determines that the Board has not complied with Section 5 of FOIA and orders disclosure of all or a portion of a public record.

Section 5(8) of FOIA also states that if the Board denies in whole or in part a request to inspect or receive a copy of a public record or portion of a public record, the requesting party may do either of the following:

- (a) Appeal the denial to the head of the public body pursuant to Section 10 of FOIA.
- (b) Commence an action in Circuit Court, pursuant to Section 10 of FOIA.

Sincerely,

A handwritten signature in black ink, appearing to read "Rex Vaughn", with a long horizontal flourish extending to the right.

Rex Vaughn
Cedar Lake Improvement Board
Chairman & FOIA Coordinator

cc: Via Email to Jlinderman437@gmail.com