

CHLOROPHYLL-A

Quick Reference Procedure Checklist



Please Note

This document is an abbreviated form of the full Chlorophyll- α Monitoring Procedures. We recommended that you read the full procedures at least once at the beginning of each field season. Full procedures are found in the CLMP Manual found here: https://micorps.net/lake-monitoring/clmp-documents/

Equipment Checklist

Chlorophyll Sampling Equipment

□ Boating safety equipment* and anchor*	Chlorophyll Filtering Equipment	
☐ Copy of full procedures or this quick	☐ 60 cc plastic syringe	
reference procedure checklist	☐ Flexible plastic tube	
☐ Secchi disk	☐ Filter holder	
☐ Chlorophyll data sheets (2)	☐ Membrane filter disks (2)	
☐ Pencil* or indelible ink pen*	☐ Tweezers and large safety pin*	
☐ Zip-lock freezer bag*	☐ Coffee filter* or paper towel*	
☐ Composite sampler with measured line*	☐ Sample storage vials and caps (2)	
☐ Clothespin*	☐ Chlorophyll sample labels (2)	
☐ Rectangular sample storage bottles (2)	☐ Aluminum foil*	
☐ Magnesium carbonate (1% MgCO₃)	☐ Fine tip permanent black marker*	
solution		
☐ Insulated cooler bag		
☐ Freezer ice pack*	*provided by volunteer	
Data Collection		
A. Sampling location, frequency, and timing		
 1. Chlorophyll samples need to be taken once a month from May through September, but exact dates differ depending on the lake's latitude. Refer to chlorophyll sampling schedule. 2. It is best to collect the chlorophyll sample between 10:00 a.m. and 4:00 p.m. on a sunny, calm day. 3. At a minimum, volunteers must collect samples for four of the five sampling events (but five is best). 		

B. Proceed to your monitoring location
☐ 1. When in position, fill out the data sheet (Lake Name, County, Date, Field ID #, etc.).
C. Measure Secchi disk transparency
 1. Take a Secchi measurement and record the depth. 2. Double the Secchi measurement and record this as your composite sample depth. 3. If lake depth is less than twice the Secchi, use three feet above the bottom of the lake as your composite sample depth.
D. Collect composite water sample
 1. Disassemble the sampler, rinse the bottle with lake water, and reassemble the sampler. 2. Clip a clothespin on the measured line at your calculated composite sample depth. 3. Place all of the line into lake so it does not get tangled. 4. Release sampler into the lake, allowing it to free fall until the clothespin is at the water surface. 5. Immediately pull the sampler up at a slow, steady, rate. 6. Upon retrieval, sampler bottle should be more than half full, but not completely full. If it does not meet these criteria, empty bottle and resample. 7. Gently mix the sampler bottle and rinse both of the rectangular brown bottles with a small amount of sample. 8. Gently mix the sampler bottle again and fill both of the rectangular brown bottles. 9. Vigorously shake the magnesium carbonate (MgCO₃) bottle. 10. Add five drops of the magnesium carbonate (MgCO₃) solution to each rectangular brown bottle. 11. Replace caps and gently shake the bottles to mix. 12. Store the bottles in the cooler bag with freezer ice pack and D10. 5 drops of MgCO₃
E. Prepare filtering apparatus
 1. All filtering must take place out of the sun. An indoor location by a sink is ideal. 2. Unscrew and open the filter holder. 3. Using tweezers, place a filter on the metal screen. Never touch filter with hands. 4. Place the rubber o-ring on the filter. 5. Screw the filter holder closed until it is moderately tight. 6. Slip the short flexible tube onto the Luer-Lok tip of the syringe.

F. Filter the samples.

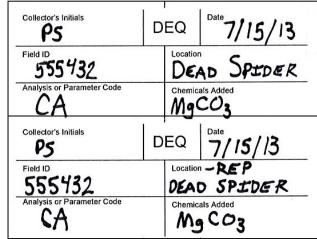
1. Gently shake one of the brown rectangular sample bottles to mix.		
2. Use the syringe to draw up sample water until it	is full, and then	
empty into sink (to rinse).		
3. Use the syringe to draw up sample water until it	reaches the 60	
cc line.		
4. With the syringe pointing up, tap it to force bub	bles to the top.	
5. Slowly push in plunger until the water is at the 50 cc line.		
6. Remove the flexible tube and put on the filter h		
7. With the syringe tip facing down, slowly push th		
through the filter (adjust pressure to achieve stead	•	
8. If it is not possible to push all 50 cc through the		
record the amount of water you did use on the da	•	
9. Unscrew the filter holder and using a tweezer a		
filter into quarters with the algae on the inside of	•	
10. Using the tweezer, put the filter into a small vi		
11. Repeat the process with the second brown rec	· ·	
G. Label and freeze your samples		
1. Fill out the chlorophyll vial labels with a fine tip		
permanent black marker , following the example shown.	Collector's Ini	
3. Fill out "CA" in the parameter code.	Field ID	
2. Fill out "MgCO ₃ " in chemicals added.	5554	
4. Write "-REP" on the second label by the lake na	me. Analysis or Pa	
5. Attach the labels to the vials lengthwise so that	CA	
none of the label overlaps itself.	Collector's Ini	
6. Fully cover both vials with aluminum foil (wrap	P5	
them together).	Field ID	
7. Write lake name and month on the foil.	5554	
8. Put the samples into a zip-lock bag labeled with	lake Analysis or Pa	
name, County, and Field ID #.		
9. Fold the data sheet, place in separate zip-lock b	ag, and place	
that in the other zip-lock bag with your samples.		
10. Store in freezer.		
11. Rinse all filtering equipment with tap water (no	o soap) and	
allow to air dry.		



F7. Adjust pressure to achieve steady drops (drop drop drop drop)



F9. Fold into quarters using pin and tweezers





Failure to use foil will result in your sample being rejected.

H. Turn in your sample

1. Deliver the frozen samples and data sheet to the proper turn-in location on the designated turn-in date (according to the chlorophyll-a schedule).

Reporting Your Data

Deadline: October 31.

If you can, enter your data (i.e. lake name, sample date, composite sample depth, etc.) into the MiCorps Data Exchange.

After the EGLE lab processes your sample, the chlorophyll-a result will be matched to your data in the Data Exchange by MiCorps staff.

If you are unable to enter your own data into the MiCorps Data Exchange Network, program staff will enter your data for you after receiving your datasheet with your frozen chlorophyll sample.

Questions?

Contact: Jean Roth, jean.roth@mymlsa.org, 989-257-3715 or Erick Elgin, elgineri@msu.edu, 218-340-5731