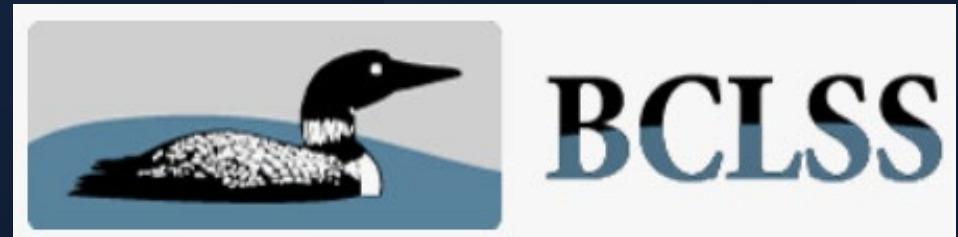
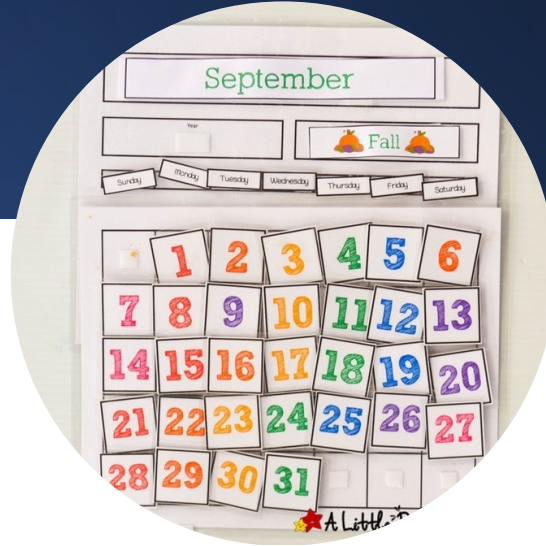


# A Sampling Event in the Life of a Volunteer



A Guide to the BC Lake Stewardship and Monitoring Program

# Step 1: Assessing the day

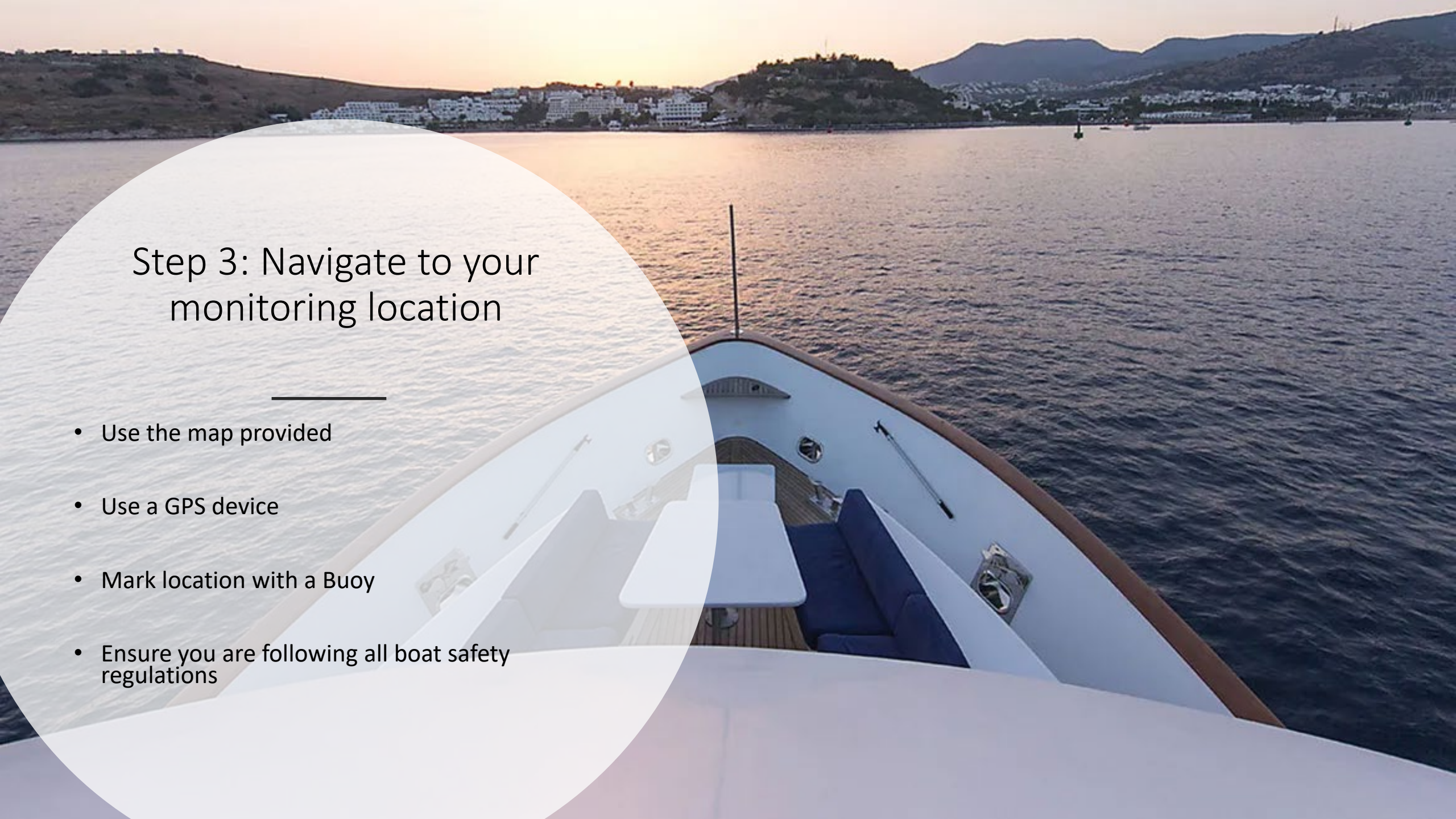


- Check the time: sampling is best done between **10am and 2pm**
- Check the day: sampling should be done **Sunday through Thursday only** (do not sample on Friday or Saturday; do not sample the Sunday of a long weekend)
- If its stormy out, do not go sampling

## Step 2: Preparing your gear

- Ensure you have everything you need for a successful sampling trip
- Clipboard with field sheets & map
- Secchi Disk, thermometer
- Field Meter and calibration instructions
- Level 3 Extras
  - Water Sampler
  - Bottle Kit
  - Lab Requisition, Waybill, Shipping Materials (Ice)
- Check that everything is in good working order





### Step 3: Navigate to your monitoring location

- 
- Use the map provided
  - Use a GPS device
  - Mark location with a Buoy
  - Ensure you are following all boat safety regulations

# Step 4A: Record Environmental Conditions

- Top portion of your field sheets
- Some readings are subjective, but still important
- Observations like storm events, pollen swarms, bird migrations, etc.

SITE OVERVIEW		
	EXAMPLE DATA	YOUR DATA
Lake Name	Tabor Lake	
Sampling Site Location Description	From west dock	
Date (dd-mmm-yyyy)	03/May/2022	
Time (24 hr)	11:00	
Volunteer Initial(s)	KK/GH	
Number of Volunteer Hours	1 hr	
CURRENT CONDITIONS		
Precent Cloud Cover (clear is 0/10)	9/10	
Wind Direction	east	
Wind Speed (calm, low, med, high)	low	
Surface Water Condition (flat, ripple, chop, rough)	ripple	
Air Temperature (to nearest 0.01 °C)	14.04	
Secchi Depth (average to 0.01 m)	5.42	
YSI Calibration (Record % D.O. reading at the end of calibration)	95.63 %	
Observations/Comments:		

# Step 4B: Take a Secchi Depth Reading



- No hats or sunglasses
- Work off the shady side of the boat
- A - Lower disk till it disappears, take reading at water surface
- B - Raise disk till just reappears, take reading at water surface
- C - Average two readings, add value to field sheet




# How to Calibrate my YSI Pro Solo ODO Field Meter

**IMPORTANT:** The YSI Pro Solo ODO Field Meter **MUST** be calibrated for **EVERY** sampling event.

To get accurate readings the meter depends on Barometric pressure, which varies daily, so the meter has to be calibrated each time you sample.

## STEP 1

Connect the cable to the reader. Press and hold the  button to power on the hand held reader.

Loosen, but do not remove, the grey protective cover from the sensor to allow the sensor to breathe.

Press the "Cal" button on the hand held reader. A menu will appear in the top left corner of the screen.



Escape/Exit



Calibration menu



Navigation arrows

Enter/Accept

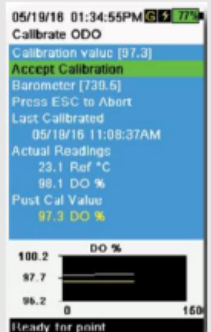
Power On/Off

## STEP 2

Using the  and  buttons, scroll until "ODO" is highlighted. Press "ENTER".

Using the  and  buttons, scroll until "DO%" is highlighted. Press "ENTER".

Allow the sensor to stabilize for several seconds, until the line is flat (40 seconds). Press "ENTER" to accept the calibration.




**NOTE:** The sensor needs to be stored in the grey protective cover with a moist sponge to ensure that the membrane on the sensor does not dry out. If the membrane dries out the sensor will no longer work.

## STEP 3

Press "Esc" repeatedly until you return to the main readout screen. Remove the grey protective cover from the sensor.

Proceed with collecting the DO/Temp profile data being sure to record your measurements on the field sheet.

When your profile is complete, press and hold the  button to power off the hand held reader.

Ensure the sponge in the grey protective cover is moist. Replace the cover on the sensor and disconnect the cable from the reader for storage.



# Step 4C: Calibrate Field Meter

- Record the DO% value on the field sheet during calibration

<https://www.youtube.com/watch?v=bCGumX1Qmzc>

HANDHELD DISSOLVED OXYGEN METER

**YSI PRO SOLO**

Professional Calibration








LAKE PROFILE DATA Record dissolved oxygen (DO) and water temperature to nearest 0.01										
Depth (m)	Temp. (°C)	D.O. (mg/L)		Depth (m)	Temp. (°C)	D.O. (mg/L)		Depth (m)	Temp. (°C)	D.O. (mg/L)
0				17				34		
1				18				35		
2				19				36		
3				20				37		
4				21				38		
5				22				39		
6				23				40		
7				24				41		
8				25				42		
9				26				43		
10				27				44		
11				28				45		
12				29				46		
13				30				47		
14				31				48		
15				32				49		
16				33				50		

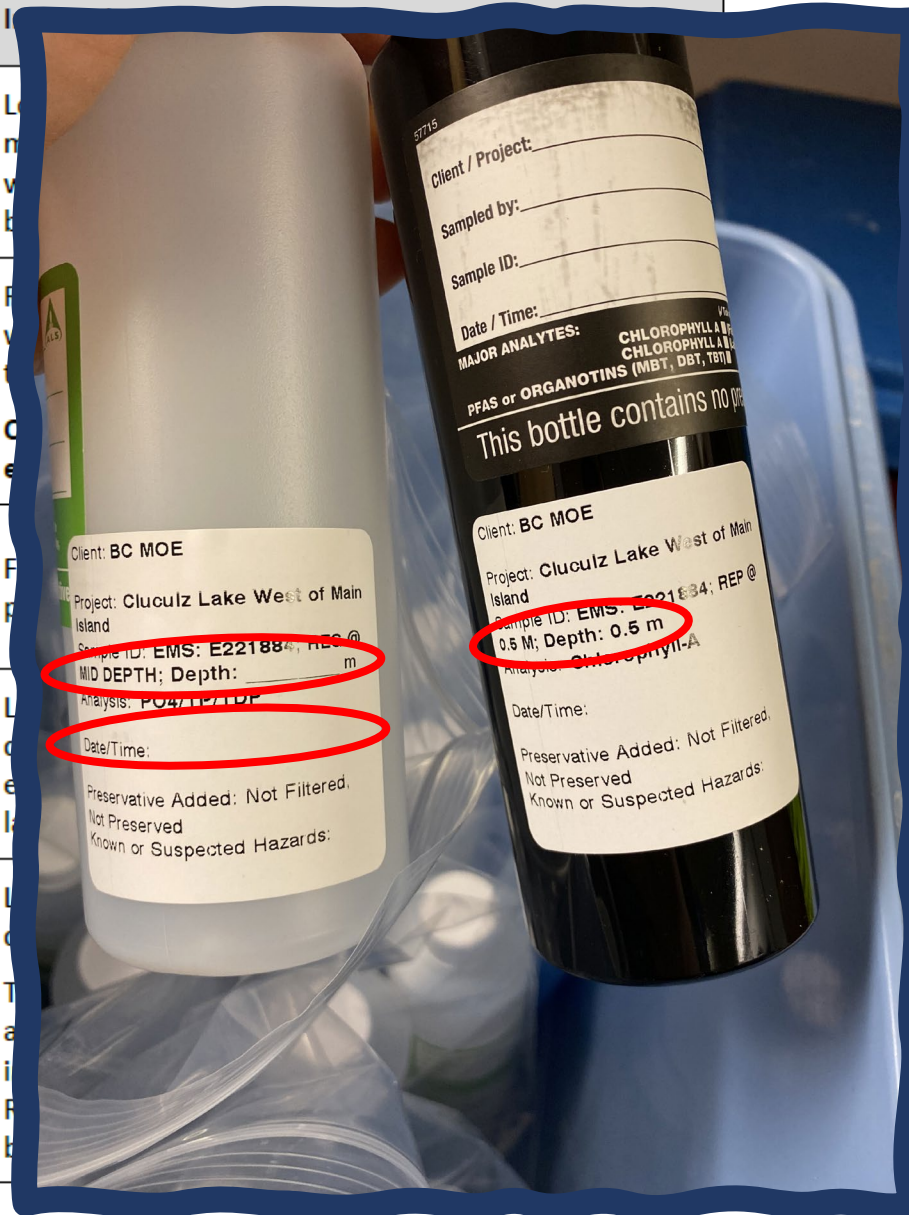
## Step 5: Collect Profile Data

- Bottom Portion of your field sheets
- Record Temp and DO every 1 m from surface to 1 m above bottom
- Record Dissolved Oxygen in mg/L



## BCLSMP Level 3 Bottle Guide

Order / Sample ID	Bottles	Location	
1 REG @ 0.5 m		Taken 0.5 m from surface	
2 REP @ 0.5 m		Taken 0.5 m from surface	
3 BLF (Blank Sample)		N/A	
4 REG @ mid-depth		Taken mid-depth	
5 REG @ bottom		Taken 1 m above bottom	



## Step 6A: Label your bottles

- Use the provided sharpie to fill in the labels on all 7 of your bottles
- The bottles you have may look slightly different in shape, but will be the same types as in the guide
- Ensure you fill in:
  - Depth (may be pre-printed)
  - Date/Time:



## Step 6B: Collect your water samples

- Open both ends of the sampler and secure them open, close the decanting tube
- While holding the messenger (weight), lower the sampler until it reaches the desired depth on the marked rope
- Release the messenger down the rope, wait for the sampler ends to close
- Pull the sampler back onto the boat

# Step 6C: Complete your field form

- The reverse side of your field sheets
- Record the data from your water quality samples
- Add any observations you have such as colour of the water, cloudiness, floaties, algae, etc.



WATER SAMPLING					
EXAMPLE DATA					
Sample	Depth (m)	Time Collected	Odour	Colour	# Bottles
REG @ 0.5 m	0.5	10:00	none	clear	2
REP @ 0.5 m	0.5	10:05	none	clear	2
BLF (Blank Sample)	0.5	10:05	N/A	N/A	1
REG @ mid-depth	5.9	10:30	none	clear	1
REG @ bottom-1m	10.7	10:45	organic	brown	1
YOUR DATA					
Sample	Depth (m)	Time Collected	Odour	Colour	# Bottles
REG @ 0.5 m					
REP @ 0.5 m					
BLF (Blank Sample)					
REG @ mid-depth					
REG @ bottom-1m					
<b>Observations/Comments:</b>					

# Step 7A: Fill out your requisition form

- Please record the following
  - Number of Containers
  - Collection Start
  - Collection End
  - Upper Depth
  - Secchi Depth (also called Extinction Depth)
- Include one lab requisition per sample site with your sample
- Take a photo of the completed requisition as a record

Urgent? _____	Csr No. _____	Office 70 _____	Client VL _____
Study _____	Project LSMP		
Lab	ALS Global		
Ministry Contact	KMCNEILL Kirsten McNeill		
Sampler	LSMP Volunteers		
Signature	_____		
EMS Id	E206955	Well Plate #	_____
Location	NALTESBY LK. DEEP STN. NEAR MAIN ISLAND		

Sampling Agency	
Code 70	Name Omineca-Peace, Prince George
Address	1011 - 4th Avenue
City	Prince George
Postal Code	V2L 3H9
Phone	(250)565-6135
<b>Number of Containers</b> 7	

Instructions To Lab CLIENT CODE: VL; SAMPLES ARE UNFILTERED, UNPRESERVED  
TP, TDP, OP SUBSAMPLES ALL ANALYSED FROM 1 X 250ML HDPE BOTTLE

State	FW	Descriptor	GE	Collection Method	GRB		
No.	Class	Collection Start YYYY-MM-DD HH:MI	Collection End YYYY-MM-DD HH:MI	Upper	Lower	Tide	Comment
1	REG	2022-06-10 10:00	2022-06-10 10:00	0.5	---	---	REG @ 0.5 m
2	REP	2022-06-10 10:05	2022-06-10 10:05	0.5	---	---	REP @ 0.5 m
3	BLF	2022-06-10 10:05	2022-06-10 10:05	---	---	---	BLF (Blank Sample)
4	REG	2022-06-10 10:30	2022-06-10 10:30	4.0	---	---	REG @ mid-depth
5	REG	2022-06-10 10:45	2022-06-10 10:45	8.0	---	---	REG @ bottom-1 m
6							

OTHER Tests			
Smpl No.	FIELD TEST Details		Method Results Units
1	0019	Extinction Depth	FLD 3.75 m

**NOTE:** Please enter your field results for Secchi Disk Depth (Extinction Depth) measurement in the line above



# Step 7C: Ship your cooler



- Double check that your cooler contains 7 bottles, 1 requisition and several ice packs
- Seal the cooler lid with packing tape
- Stick the ALS Laboratories address label (provided) on top of the cooler
- Find a Purolator shipping waybill (provided)
- Bring your cooler and the waybill to the nearest Purolator Courier location for shipping **within 24 hrs**

PLEASE PRINT CLEARLY OR TYPE / VEUILLEZ IMPRIMER OU ÉCRIRE EN LETTRES MOULÉES		SHIP MODE / MODE DE TRANSPORT		BILL OF LADING NO. / NO. DE COMMANDEMENT / NON NEGOCIABLE / NON NEGOCIABLE	
SENDER ACCOUNT NO. / N° DE COMPTE DE L'ÉMETTEUR		IMPORTANT - TELEPHONE		2280 143 9732	
SENDER (FROM) / EXPECTEUR (DE)		MO. DVJR. YRAN		Purolator	
STREET ADDRESS / ADRESSE (N° ET RUE)		APT. SUITE / APP. BUREAU		1 888 SHIP-123 www.purolator.com	
CITY / VILLE		POSTAL / ZIP		COUREUR ROUTE / ROUTE DU COURRIER	
RECEIVER (TO) / DESTINATAIRE (À)		RECEIVER / DESTINATAIRE		MO. DVJR. YRAN	
HISTOVET SURGICAL, PATHOLOGY		21 VARDON DR		GUELPH ONT. N1G 1W8	
DR B WILCOCK		519 822 4486		0179	
MEDICAL SPECIMENS / LZ PAS D'ESPÈCES		0179		011 2280143973	

# Step 8: Submit your data

Submit your data using the online data submission tool <https://arcg.is/1e90vb>

OR

Complete the digital field form and email it to [volunteerlakes@gov.bc.ca](mailto:volunteerlakes@gov.bc.ca)

### Helpful tips for filling out this field study sampling form:

1. Before you start, review the [Volunteer Lake Monitoring Methods and Resources](#) section.
2. **Submitting photos** along with your sampling data is **mandatory**.
3. Have your **completed lake depth profile sheet** ready to upload.
4. **Finally, have your photos and lake depth profile sheet on the same device you are using to fill out this form** in order to access them easily.

**Sampling Form Field App:** Try our mobile app to enter and save data offline (available for [Android OS](#) or [Apple iOS](#)).

**Site Information** ▼

**EMS ID (required):\***  
Please refer to your requisition form (e.g. E123456 or 0123456)

**Lake name (required):\***  
(e.g West Lake)

The digital form looks just like your paper field forms

Open a new tab at the bottom for each sampling date

Email the form to us after each trip

The online tool is used through a web browser or app

There are 2 separate sections to complete

The data comes directly to us as soon as you hit submit

BC LAKE STEWARDSHIP AND MONITORING PROGRAM - LEVEL 2 FIELD FORM											
Take evenly spaced (weekly or bi-weekly) surface water temperature, clarity (Secchi disk), and lake profile readings throughout the ice off season. Sampling should be made at the same time each week, if possible, and if weather and water conditions permit. Any departure from these conditions should be recorded under "comments". Please collect a minimum of 12 samples per year, taken between 10:00 am and 2:00 pm.											
SITE OVERVIEW											
<b>Lake Name</b>	<b>EXAMPLE DATA</b>		<b>YOUR DATA</b>								
Sampling Site Location Description	Tabor Lake		From west dock								
Date (dd-mmm-yyyy)	03-May-22										
Time (24 hr)	11:00										
Volunteer Initials (s)	KK/GH										
Number of Volunteer Hours	1 hr										
CURRENT CONDITIONS											
Precent Cloud Cover (clear is 0/10)	10-Sep										
Wind Direction	east										
Wind Speed (calm, low, med, high)	low										
Surface Water Condition (flat, ripple, chop, rough)	ripple										
Air Temperature (to nearest 0.01 °C)	14.04										
Secchi Depth (average to 0.01 m)	5.42										
YSI Calibration (Record % D.O. at surface after calibration)	95.63%										
Observations/Comments:											
LAKE PROFILE DATA Record dissolved oxygen (DO) and water temperature to nearest 0.01											
Depth (m)	Temp. (°C)	D.O. (mg/L)	Depth (m)	Temp. (°C)	D.O. (mg/L)	Depth (m)	Temp. (°C)	D.O. (mg/L)	Depth (m)	Temp. (°C)	D.O. (mg/L)
VISIT 1	VISIT 2	VISIT 3	VISIT 4	VISIT 5	VISIT 6	VISIT 7	VISIT 8	VISIT 9	VISIT 10	VISIT 11	VISIT 12

# Questions?

*Thank-you all for attending and for your commitment to the BCLSMP*

Feel free to contact us anytime by emailing [volunteerlakes@gov.bc.ca](mailto:volunteerlakes@gov.bc.ca)

Level 3 Monitoring Training Complete