WATER QUALITY SAMPLING GUIDANCE

May 2024

INTRODUCTION

This document will provide guidance to communities who are participating in Surfers Against Sewage's Citizen Science water quality testing programme throughout the 2024 bathing season. SAS will be supporting communities in prospective bathing rivers throughout the UK to sample two sites on a weekly basis between May and September. The sampling will cover the following microbiological indicators: *Escherichia coli* (*E. coli*), total thermotolerant coliforms, and Enterococci. Two sites will be investigated; one at the prospective bathing application site, and another site further upstream near a potential pollution source (this second site can be determined at the communities' discretion).

The document will cover equipment lists, sampling and labelling protocol, and laboratory delivery logistics. If any further information is required, or if you have any questions about the protocol, please do not hesitate to contact wildwaters@sas.org.uk

METHODOLOGY

EQUIPMENT LIST

- Telescoping sampling rod
- Beaker
- Microbiology sampling bottles (red lid) – sourced from the laboratory
- Laboratory sample paperwork – sourced from the laboratory
- DPD delivery bags – sourced from the laboratory
- Ice blocks (make sure they are frozen before going out to sample!)
- Cool bags
- Zip lock bags
- Disinfectant wipes
- Hand sanitizer
- Powder-free nitrile gloves
- Virkon disinfectant tablets
- Pen or pencil for labelling

RIVER SAMPLING PROTOCOL

The below information is available in video format and can be found here: Citizen Science Water Quality Sampling Training (youtube.com)

- Using the antibacterial disinfectant wipes provided, thoroughly wipe all surfaces of the beaker which may come into contact with water, and the first 18-24 inches of the pole. If you have sensitive skin, please ensure you wear gloves whilst doing this step because the wipes may cause irritation.
- Stand on the riverbank/beach in a location with safe and solid ground. Because we have a telescoping sampling pole, we will not be entering the water, but sampling directly from the riverbank. Extend the telescoping sampling pole to its longest setting, so as to be able to reach as close to the middle of the river or as deep into the coastal water as possible.
- When sampling, aim to take a sample from 30cm beneath the water's surface, in water that is at least 1m deep (where possible).
- Before taking a sample, **rinse the beaker out with water from your sampling location three times.** This is to ensure that the sample you are taking is representative of the water you are sampling from.
- After rinsing the beaker three times, fill the beaker to the top with water from your sampling location. **This is your sample.**
- Remove the beaker from the river, and bring the pole back to the bank (ensuring not to spill too much sample if possible!). You are now ready to decant your sample into the sampling bottles provided.

SAMPLE PREPARATION AND STORAGE

- Remove the red lid (Figure 1) from the microbiological sampling bottles provided. These bottles are sterile, so please ensure not to open or tamper with them before use. They have been pre-prepared with 20mg/L sodium thiosulfate.
- Very carefully, pour the sample from your beaker into the microbiological bottles provided. It is helpful here if you have more than one person (one to hold the bottle and one to pour the sample from the beaker). However, if you are alone, try to find a flat surface to place the bottle on, and pour from there.
- Fill the bottle to the 500mL mark (visible at the neck of the bottle). This ensures there is enough sample for analysis, while also leaving ample airspace above to allow the microorganisms to respire.
- Label the sample bottle with the following information: Date, Sample Type (make sure this matches the 'sample reference' box written on the form provided so that it can be matched when the results are sent back), Water Type (this needs to match the 'matrix type' box written on the form provided).
- Next, fill in the paper form provided to be sent off to the laboratory alongside the samples. An image of this with notes on how to fill it in has been provided along with this guidance – see 'PMS water sample request form with notes' (Figure 2).
- Place the sample(s) into your cool bag provided, next to the ice block to make sure they are kept cool. If you are travelling home after the sampling and are waiting for the DPD collection, you may place the samples in your fridge if this

is convenient for you. If you choose to do this, please make sure the bottles are double-contained in an additional container and are kept separate from any food. **Do not freeze the samples**.

- Sanitize your hands using the sanitizer provided after handling the samples.

SAMPLE DELIVERY

Samples are collected and delivered to the laboratory by DPD courier service. This is arranged by PMS (the laboratory we are using), however it is important to notify PMS prior to the sample collection so they can arrange delivery. PMS' working days are Monday-Friday 07:30-17:00. Collections made on a Friday will be analysed the following Monday, so for accurate results it is best to sample Monday-Thursday. To arrange a collection and delivery, do as follows:

- Either a) the day before, or b) the morning of (before 10am) your intended sampling day, call PMS on **0161 643 5330** to notify them of the required collection. PMS prefer this to be the day before for logistical ease, however it is possible to do it the morning of the sampling day if needed.
- PMS will then arrange for DPD to collect the samples the same day **before 17:00** from your desired location (please provide What3Words).
- Prior to the collection, ensure the samples are placed in the DPD delivery bags (Figure 3) provided and sealed. DPD will then attach their own labels to the bags.

N.B: If you are having issues with DPD delivery, please contact Eva and we can arrange for you to receive pre-paid postal labels so you can deliver the samples via Royal Mail at your convenience.

DATA CURATION

Sample analysis takes three days to complete once the samples have arrived at the laboratory. As the main contact for the laboratory, data will be sent directly to us at SAS for analysis, curation, and sharing. We will endeavour to share the water quality results with the communities within one working day of receiving the data.

Figure 1. Microbiological sampling bottle

PMS Form 050 Issue 10

PMS Water Sample Request Form

Please Tick Boxes For Analysis Required & state Matrix Type

Company Name Surfers Against Sewage

Date The date you filled in this form

Your Order Number

Sampled By The name of your community

Site Reference The name of your river

Sample Date The date you took the sample

	Sample Reference Customers Identifier Comments	Time Sampled HH:MM	Temp °C	Matrix Type e.g. Potable, Pool etc.	Tvc@37oc & Tvc@22oc	Tvc@37oc	Coliforms	E.coli	S.aureus	Enterococci	C.perfringens	Pseudomonas	SRB	NRB	Legionella	Other (Please Specify)
1	This information will be returned to us along with the data to allow us to identify which site the sample is from. Write here whatever allows you to identify the sample easiest (i.e. River - Location - Bathing site/pollution source site). Use one row for each sample (i.e. one for the bathing site, one for the upstream pollution source)	x	If available	Bathing water			x	x		x						
2																
3																
4																
5																
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7																
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Figure 2. PMS water sample request form

Figure 3. DPD delivery bag