

Appendix B

Sample Collection Techniques

Adapted From EPA's "Pocket Sampling Guide for Operators of Small Water Systems"
(EPA 814-B-92-001)



For More Information

Copies of the “Pocket Sampling Guide for Operators of Small Water Systems” (EPA 814-B-92-001) on which this appendix is based are available from the Environmental Resource Information Center (ERIC). The cost is \$8.56 plus \$4.00 shipping and handling. ERIC’s telephone number is 1-800-276-0462. The ERIC document number for the sampling guide is G-654.

Sample Containers

Many different sizes and types of sampling containers may be used for collecting coliform samples. Bottles should be obtained from labs only, and most labs supply a 125-mL sterilized, plastic bottle, but you may ask for larger volume plastic or glass bottles so long as they have been sterilized. Some labs will wrap the bottle in paper to protect it from contamination. Glass-stoppered bottles sometimes have foil covering the top for protection. A few labs may even furnish a single-service, sterilized, polyethylene bag or bottle containing sodium thiosulfate. The sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) is a dechlorinating agent which also stops the disinfection action of chlorine during the sample's transit to the laboratory, thus providing a more representative picture of the samples microbial content when the sample was taken.

Remember, you are sampling the water to determine what the water is like coming out of the consumer's tap at the time you took the sample, and not what it is like during transit to the laboratory. **Do not rinse contents from the container!**



Sample Procedure

The lab that supplies the sampling containers normally provides instructions with the kit for the type of monitoring you are doing. Refer to those instructions when provided.

The following instructions and photos illustrate the **general** sampling procedures for collecting coliform analysis monitoring samples.

- 1. Assemble all of the sampling supplies before you begin.** A dechlorinating agent is needed and may need to be furnished (if not already supplied with the containers) when sampling chlorinated waters (such as those found in the distribution system). The containers are sterilized, so handle them carefully. **Wash your hands thoroughly before handling supplies.**
- 2. Go to the sampling location(s) specified in the sampling plan.** Representative sampling locations are located in the distribution system and are accessible during normal business hours. Examples may include hospitals, city buildings, pump stations, and restaurants. The tap should be clean, free of attachments (hoses, etc.), and in good repair (no leaks). If possible, avoid drinking fountains and faucets that have swivel necks.



3. If possible, remove any aerators, strainers, or hoses that are present, because they may harbor bacteria. (You may not be able to remove the aerator or find a non-swivel faucet.)



4. Open the *cold* water tap for about 2 to 3 minutes before collecting the sample. (You may want to time this step—3 minutes is a long time.) This clears the service line.

5. Fill out label, tag, and lab form in waterproof ink. Make sure the label is dry before writing on the label.



6. Adjust the flow to about the width of a pencil. Check for steady flow. Do not change the water flow once you have started sampling. It could dislodge microbial growth.



The following steps describe collection procedures using both the bottle and the bag.

7. Remove the bottle cap (stopper, etc.), or open the plastic bag. Be careful not to touch the inside with your fingers. Then position the bottle or bag under the water flow. Hold the bottle in one hand and the cap in the other.



Do not lay the cap down or put it in a pocket! Also, take care not to contaminate the sterile bottle (or bag) or cap with your fingers or permit the faucet to touch the inside of the bottle or bag.

DO NOT RINSE OUT THE BOTTLE OR BAG BEFORE COLLECTING THE SAMPLE!

8. **Fill the bottle to the shoulder or to about 1/4 inch from the top.** If using a plastic bag sampling container, fill it to the marked fill line.



9. **Place the cap on the bottle and screw it down tightly.** If using a plastic bag, pull the wire tabs and whirl the bag three times for a tight seal. Samples should be iced immediately, if possible.



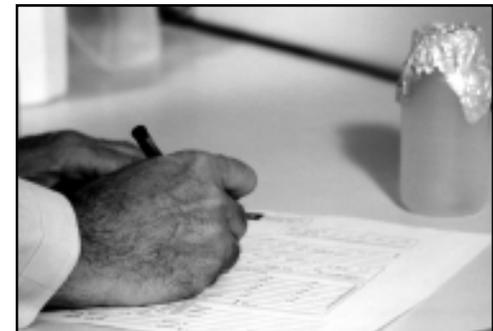
10. **Turn the tap off.** Replace the aerator, strainer, or hose.



11. **Check that the information on the label is correct.**



12. **Complete any additional lab forms that came with the sample bottle,** including the chain-of-custody form (if required), with the necessary information.



13. The samples must reach the laboratory within 30 hours of collection. It is recommended that all samples be refrigerated or iced using “blue” ice (cooled to about 4° to 10° C). All samples received in the laboratory must be analyzed on the day of receipt.

