

VOC

SAMPLE COLLECTION PROCEDURE

Reference Method EPA 524.3

**Read instructions carefully.
Follow all instructions to avoid sample rejection.**

Safety concerns:

Caution! Sample bottles contain chemicals. Open containers slowly and carefully. Do not rinse out containers.

- View [Safety Data Sheets](https://www.health.state.mn.us/communities/environment/envlab/sdsinformation.html)
(<https://www.health.state.mn.us/communities/environment/envlab/sdsinformation.html>)

Trip blanks:

- Please review Trip Blank document for information on how to use trip blanks while collecting VOC samples.
- [Trip Blanks \(PDF\)](https://www.health.state.mn.us/communities/environment/water/docs/samproc/tripblanks.pdf)
(<https://www.health.state.mn.us/communities/environment/water/docs/samproc/tripblanks.pdf>)

Sample bottles/preservative:

- Three 40 mL amber vials with 25 mg ascorbic acid ($C_6H_8O_6$) and 200 mg of maleic acid ($C_4H_4O_4$)
- **Trip Blanks:** Two 40 mL vials pre-filled with VOC-free water and 25 mg ascorbic acid ($HC_6H_7O_6$) and 200 mg of maleic acid ($C_4H_4O_4$) prepared by the laboratory.

Shipping/sample hold time:

- Ship within 3 days. The sample must arrive at the laboratory within 14 days of collection.

Sampling locations:

- Sample at the first sample tap following treatment (treated water).

Prior to collection:

- At least 48 hours before sampling, remove ice packs from the sampling kit and freeze them.
- Measure chlorine residual. If total chlorine residual is greater than 5 mg/L, do not collect samples. You must reduce the chlorine residual before taking samples.

Sample collection procedure:

1. Attach the pre-printed label to the bottle. If you do not have a pre-printed label, write the following information, using a ballpoint or permanent pen, on the generic bottle label: PWSID, PWS Name, and Location ID.

2. Remove any attachments from the sample tap.
 3. Turn on the cold water tap and run for 4 to 5 minutes, or until the water temperature has stabilized, whichever is longer.
 - a. If there is only one faucet handle, make sure it is in the cold water position.
 4. Reduce the flow of the water so the stream is steady and the width of a pencil.
 5. Remove bottle cap and hold in hand. Do not touch the underside of the cap or the inside of the bottle.
 6. Position the vial at a slight angle under the water flow.
 7. Carefully fill the vial to form a convex meniscus above the top of the vial (the curved upper surface of a liquid formed by surface tension). To do this, use the cap of the vial to complete filling of the vial. Be careful not to overfill the vial.
 8. Screw the cap back on the vial so that the milky white side of the septum is in contact with the water. It is okay if some water spills over the sides of the vial when capping.
 9. Turn the vial over and tap it lightly against your hand and check for air bubbles. **Once capped, you may not reopen the vial and use it again.**
 - a. If there are air bubbles in the vial, dispose of the vial by pouring the water down the drain and recycling the vial.
 - b. You must collect a new sample using a new vial. The laboratory will reject samples, per method requirements, if there are any air bubbles in the vial.
- Note:** Samples will be rejected by the laboratory, per method requirements, if there are any air bubbles greater than 6 mm in diameter at the time of analysis
10. Gently mix the sample by turning the vial back and forth for 15 seconds.
 11. Repeat for the remaining two vials.
 12. Replace any attachments that you removed from the faucet.
 13. Upon completion of sampling, immediately (within 15 minutes), place sample and trip blanks in cooler with frozen cooling material. Samples and trip blanks must remain chilled with cooling material until they are received at the laboratory.

Complete the Chain-of-Custody form using a ballpoint or permanent pen:

1. Name of the sample collector.
2. Date and Time collected (include a.m. or p.m.).
3. Field Number (if applicable).
4. Put your signature on the "Relinquished By" line, including date and time. The date and time are when the sample is put in the return mailer and sealed. If samples pass hands prior to packaging, both parties must sign, date, and time. The first party would put down the date and time of the transfer, and the second party would put down the date and time the sample is packaged.

Deliver samples to the laboratory:

1. All sample containers must have cooling material present without evidence of sample freezing.
2. Sample temperature requirements depend on when the lab receives the sample:
 - a. Received 0 - 24 hours after collection: frozen or partially frozen (i.e. containing some solids) cooling material must be present. The temperature of the cooling material must be less than the temperature of the sample(s).
 - b. Received more than 24 hours after collection: frozen or partially frozen cooling material must be present. The temperature of the samples must be between 0.0 and 6.0° C.
3. Dropping off samples in person:
 - a. Frozen or partially frozen cooling material must be present. Laboratory staff must confirm the state of the cooling material. The temperature of the cooling material must be less than the temperature of the sample(s). Temperature requirements listed above must be followed.
 - b. Physically hand cooler/container containing samples and cooling material to laboratory sample receiving staff. Do not leave sample containers at the sample dock unattended.
4. Shipping samples:
 - a. Make sure the completed Chain-of-Custody is in the shipping container.
 - b. Add enough fresh, frozen cooling material to the mailing container to maintain appropriate sample temperature as indicated above, with no evidence of freezing.
 - c. Ship to the Public Health Laboratory using the applicable address. Because of the temperature requirement, it is recommended to ship using **guaranteed** overnight shipping.

Courier Service (Spee-Dee, UPS, FedEx, etc.)

Minnesota Department of Health
 Public Health Laboratory
 Environmental Sample Receiving
 601 Robert Street North
 Saint Paul, MN 55155-2531

U.S. Postal Service – 1st Class

Minnesota Department of Health
 Public Health Laboratory
 Environmental Sample Receiving
 P.O. Box 64899
 Saint Paul, MN 55164-0899

If you have questions, call 651-201-4700, or email health.drinkingwater@state.mn.us

Minnesota Department of Health
 Drinking Water Protection
 651-201-4700
health.drinkingwater@state.mn.us
www.health.state.mn.us

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To obtain this information in a different format, call 651-201-4700.