NOVA SCOTIA

Best Practices Guide for Potable Water Haulers in Nova Scotia

This guide is for anyone who hauls drinking water in Nova Scotia, including truck operators, business owners, and municipal utilities. It explains the best ways to collect, move, and deliver safe drinking water. These practices help protect public health and make sure customers receive clean, safe water every time.

KEY DEFINITIONS

BULK DELIVERY: This means moving drinking water in a water tank that is fixed to a truck. The tank is filled at the water source, and the water is delivered to water storage tanks, like cisterns, at one or more locations.

POTABLE WATER: Water that is safe to drink. It comes from an approved municipal water supply or a registered public drinking water supply that is regularly tested.

POTABLE WATER HAULER: The driver or operator of a tanker truck that has a tank made for carrying and delivering safe drinking water to homes, businesses, or institutions.

HOUSEHOLD BLEACH: A common cleaning liquid that contains chlorine. In this guide, "household bleach" means regular bleach with 5.25% sodium hypochlorite, which is used to disinfect equipment and tanks when mixed with water.

Safe Water Sources and Chlorine Management

Always load water from an approved, safe source. This means only using water from:

- An approved municipal supply, or
- A registered public drinking water supply that is regularly tested.

Do not load water from private wells, lakes, rivers, or any unapproved source.

While hauling water, it is important to keep enough chlorine in the tank to keep the water safe. Make sure the water has at least 0.4 mg/L of free chlorine. If the water you load does not have chlorine, add enough to reach this level and do not let the chlorine level go above 4 mg/L.

Use a chlorine test kit that can measure chlorine between 0.1 mg/L and 4 mg/L. Check that the chemicals in the kit are not expired, and compare the kit to known chlorine standards regularly to make sure it stays accurate.

Tanks, Equipment, and Proper Storage

Tanks used for hauling drinking water need to be made from safe materials and built in a way that protects the water. To meet these needs, they should follow these basic features:

- ✔ Made from stainless steel or another material that meets ANSI or NSF 61 standards
- ✔ Built so they are easy to clean and take care of
- ✔ Have a wide access port (at least 400 mm) so workers can reach inside
- ✔ Have a watertight, lockable lid to keep out dirt and other contaminants
- ✔ Able to drain fully so no old water is left behind
- ✔ Designed to prevent freezing
- ✔ Made with a smooth inside surface that can be cleaned and disinfected properly

To help keep the water safe, all vents must be screened so insects, animals, rainwater, and dirt cannot get inside. Valves need to close tightly.

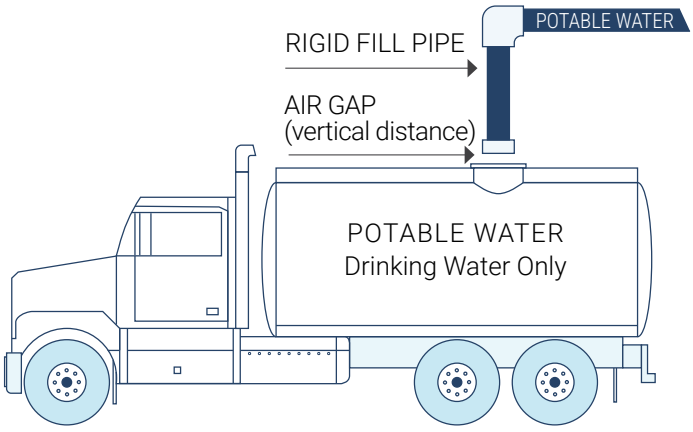
Both the tank and hoses should be clearly marked **POTABLE WATER** so everyone knows the equipment is only for drinking water.

How the tank is filled also matters. If it is filled from the bottom, a check valve is needed to prevent backflow. If it is filled from the top, there must be an air gap between the fill pipe and the tank opening to prevent backflow.

When storing the truck indoors, keep all equipment away from anything dirty or contaminated, such as sewage-hauling tools. Hoses should be drained, capped, and stored in a clean place so they stay ready for safe use.

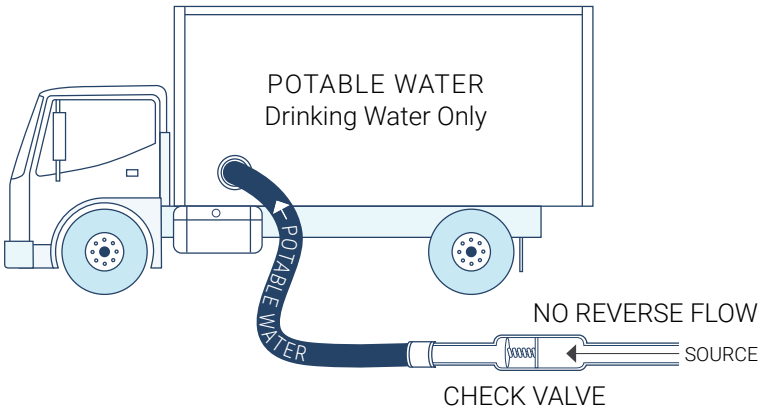
Top-Fill Hauler System

Must have an air gap between fill pipe and tank opening to prevent backflow.



Bottom-Fill Hauler System with Check Valve

A check valve is needed to prevent backflow.



Operational Practices While Hauling and Delivering Water

When hauling drinking water, it is important to follow safe steps so the water stays clean. Water should not stay in the tank for more than 24 hours after it is loaded. If the water is older than that, you should drain the tank or use the water only for non-potable purposes.

When you need to take a water sample, always collect it from the end of the hose, not by dipping into the tank. Sampling from the hose shows the quality of the water that customers actually receive.

Before each delivery, you should disinfect the parts of your equipment that will touch the water. Mix a solution made from 15 mL of household bleach (5.25% sodium hypochlorite) and 1 L of clean water. Use this mixture to disinfect the source fitting and the delivery nozzle or coupler. The solution should sit on the equipment for 5 minutes before you connect anything.

If any equipment touches the ground or something dirty, clean off any visible dirt right away and then disinfect it again before using it.

Drinking water is best delivered into cisterns or storage tanks. Delivering water directly into wells is not advised.

Putting water into a well can:

- Lead to wasted water and money, because the water often drains away quickly
- Increase the chance of contamination entering the groundwater (aquifer)
- Cause chemical reactions in the groundwater that may affect water quality
- Stir up sediment in the well water, creating problems for pumps or water treatment systems
- Cause partial collapse in some older dug wells resulting from loosened stones or crocks during rapid filling

Cleaning and Disinfection of Tanks and Equipment

It is important to clean and disinfect your tank and equipment on a regular schedule to help keep the water safe. Disinfect the tank and delivery equipment at least **once every three months**. You may want to disinfect more often if:

- The tank has not been used for a while
- Any equipment has been repaired or replaced
- You think the tank or equipment may have been contaminated

A full cleaning of the inside of the tank is suggested **every six months**. This can be done using brushes with a non-corrosive detergent or a pressure sprayer. After cleaning, the tank should be rinsed well and then disinfected.

A common way to disinfect a tank and hoses is to:

1. Add 1 L of household bleach (5.25%) for every 1,000 L of water in a full tank.
2. Fill all intake and delivery hoses with the same bleach mixture.
3. Close the valves and let the mixture sit for 12 hours.
4. Rinse the tank and hoses with clean water from an approved, safe source.
5. Dispose of the used bleach solution safely.

→ Do not release chlorinated water directly to lakes, rivers, wetlands, storm drains, or roadside ditches. If possible, allow the chlorine to dissipate by holding the water in the tank or another container for 24-48 hours before disposal. The water can then be discharged slowly onto vegetated ground where it can soak into the soil, or to a sanitary sewer if permitted by the local municipality.

Water Testing and Record Keeping

Regular testing helps make sure the water you deliver stays safe. Collect water samples to test for bacterial (presence/absence of total coliforms and *E. coli*) once **every month** while you are operating.

Samples should be taken from:

• The fill line	• The delivery hose

These samples should be sent to an approved laboratory, and it is a good idea to follow the lab's instructions carefully. Monthly testing can help show whether your cleaning and disinfection practices are working as they should.

Keeping organized records is also an important part of safe water hauling.

A logbook can help you track:

• Maintenance	• Cleaning and disinfection	• Sampling and lab results

Good record keeping helps you stay organized and shows that your operation is following safe practices. Use the printable templates in this guide to help log maintenance activities.

Daily Checklist

DATE _____

Before loading

- ☐ The water source is from an approved facility
- ☐ The chlorine test kit has not expired
- ☐ Tank and hoses labelled POTABLE WATER
- ☐ Backflow protection checked

Loading

- ☐ Free chlorine is between 0.4–4.0 mg/L
- ☐ Load volume is recorded in the logbook

Before each delivery

- ☐ Nozzle and fittings disinfected
- ☐ Any contamination is corrected immediately

Delivery

- ☐ Free chlorine is between 0.4 – 4.0 mg/L
- ☐ Delivery details recorded

End of day

- ☐ Water is not held longer than 24 hours
- ☐ Equipment stored away from contamination

Routine Cleaning Log

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CLEANING ACTIVITY (SELECT ALL THAT APPLY)	DATE/TIME	SIGN NAME PRINT NAME	NOTES
☐ Full Tank Cleaning ☐ Disinfect Tank ☐ Disinfect Delivery Equipment (e.g., hoses, nozzles, fittings)			
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RECOMMENDED MAINTENANCE:

- Disinfect the tank and delivery equipment at least every 3 months, and more often if the system has been unused, repaired/replaced, or possibly contaminated.
- Complete a full internal tank cleaning every 6 months.

Monthly Sampling Log

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DATE/TIME	FILL LINE			DELIVERY HOSE		
	Free Chlorine *(mg/L)*	Total Coliforms *(P/A or CFU/100mL)*	*E.Coli* *(P/A or (CFU/100mL)*	Free Chlorine *(mg/L)*	Total Coliforms *(P/A or CFU/100mL)*	*E.Coli* *(P/A or (CFU/100mL)*

Free Chlorine Acceptable Range: 0.4 – 4.0 mg/L
Total Coliforms Acceptable Results: Absent (A) or 0 CFU/100mL
E.coli Acceptable Results: Absent (A) or 0 CFU/100mL