Filling station and water cart

A. GENERAL INFORMATION

A.1. Filling station information

Filling station location (e.g. village, town, community, parish, district, province, state)	
Additional location information State the reference system and units, if using coordinates (e.g. national grid reference coordinates, GPS coordinates)	
Name of entity responsible for the management of the filling station (e.g. name of water utility, community group, private operator)	
Water source for the filling station[a] Tick (✓) the appropriate box(es) and provide further information where applicable	❑ Piped distribution network ❑ Other. Describe (e.g. direct from borehole, river etc.):
Average volume of water distributed from the filling station per week (including units)	

A.2. Water cart information

Ownership details (e.g. name of driver, name of entity that owns or operates the water cart)			
Vehicle registration number Put **NA** if not applicable		**Vessel capacity** (including units)	

A.3. Weather conditions during the 48 hours before inspection

Circle the temperature and precipitation options below to indicate the main conditions during the 48 hours before the inspection. More than one option may be circled if conditions changed during this time. Record additional information in Section C if needed.

Temperature	<0 °C	0–15 °C	16–30 °C	>30 °C
Precipitation	Snow	Heavy rain	Rain	Dry

A.4. Water quality sample information

Record details of any water quality samples taken during the inspection. Include information for any parameters tested. Add **NA** if information is not applicable. Record additional information in Section C if needed.

Sample taken? Circle **No** or **Yes**		**Sampling location**	**Sample identification code**	**Other information**
No (go to A.5)	Yes			

Parameter tested	*E. coli*[b]		***or*** Thermotolerant (faecal) coliforms[b]		Additional parameter		Additional parameter		Additional parameter	
Results and units	Results	Units	Results	Units	Results	Units	Results	Units	Results	Units

A.5. Water treatment

Tick (✓) the appropriate box(es) and provide additional information as needed.

Location	Is the water treated?			If **Yes**, describe (e.g. type of treatment, chlorine dose, frequency of dosing, if known)[c]
Before the filling station (e.g. at a water treatment plant)	❑ Unsure	❑ No	❑ Yes	
At the filling station (e.g. on-site treatment before filling the water cart)	❑ Unsure	❑ No	❑ Yes	
In the water cart vessel (e.g. batch chlorination)	❑ Unsure	❑ No	❑ Yes	
Downstream of the water cart (e.g. household water treatment)	❑ Unsure	❑ No	❑ Yes	

[a] Carry out individual sanitary inspections for any sources of water that supply the filling station (e.g. borehole, surface water, piped distribution network), and for household practices, using the corresponding sanitary inspection packages.

[b] The presence of *E. coli* (or thermotolerant [faecal] coliforms) suggests recent faecal contamination. If detected, further action is needed, such as increased disinfection before or at the filling station or water cart, additional sampling and investigation of potential sources of contamination, and/or household water treatment advisories (e.g. boil water notice). *Note* – thermotolerant (faecal) coliforms are distinct from "total coliforms", where total coliforms do not necessarily indicate recent faecal contamination.

[c] Where chlorine is applied, the free chlorine residual concentration in the drinking-water should be tested and the result recorded in Section A.4. Where possible, turbidity and pH should also be measured. For guidance on adequate chlorine disinfection, see the *Management advice sheet.*

General note

- This form is intended for use on a single filling station and water cart (also referred to as a water truck or water tanker). Where there are multiple filling stations and water carts, additional forms will be needed. Filling stations and water carts may be inspected on a rotational basis where there are too many to cover during each inspection.

B. SANITARY INSPECTION

IMPORTANT: Read the following notes before completing the sanitary inspection

1. Tick (✓) the appropriate box for each question. For guidance, refer to the numbered risk factors in Figure 1; the numbers in the figure are linked to the questions. Record any additional risk factors present in Section C. Refer also to the *Technical fact sheet* for information on the individual components of the filling station and water cart. *Note* – the questions in this section are example risk factors only, which can be used as a starting point for adapting the form to the local context.
2. Tick the **NA** (not applicable) box if the question ***does not apply*** to the filling station and water cart being inspected.
3. Tick the **No** box if the question does apply to the filling station and water cart being inspected, but the risk factor ***is not present***.
4. Tick the **Yes** box if the risk factor ***is present***. For important situations that require attention, record the corrective actions to be taken in the last column. These notes can be used to develop a detailed improvement plan, documenting what will be done, who will do it, by when it will be done and what resources are required. For guidance, refer to the *Management advice sheet*. Where possible, address the most serious risk factors first, considering low-cost or no-cost improvements that can be made immediately.
5. If a question cannot be answered because access to a component is not possible, tick the **Yes** box. Record these issues in Section C for further investigation.

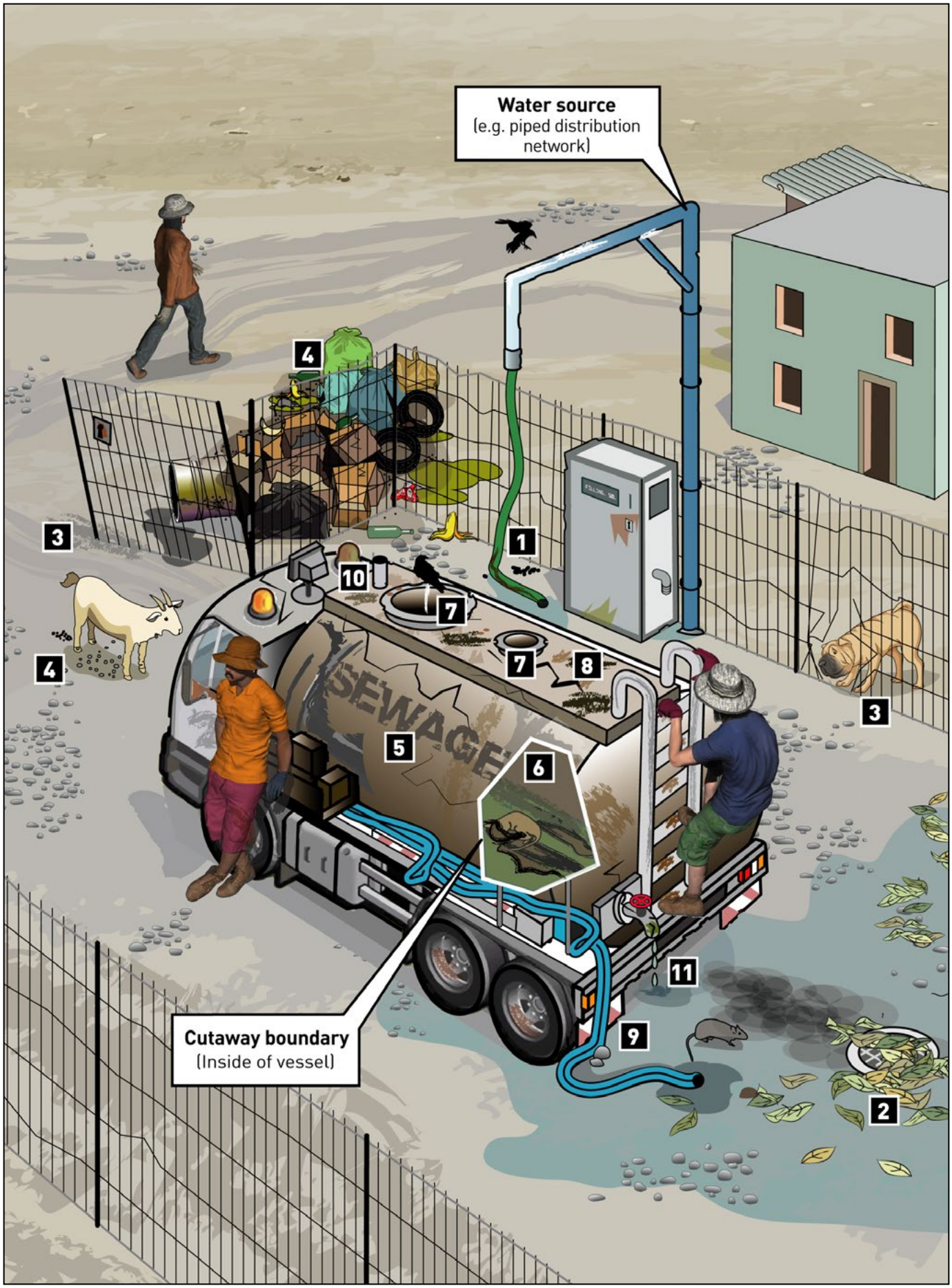

Figure 1. Typical risk factors associated with a filling station and water cart vessel

	Sanitary inspection questions	NA	No	Yes	If Yes, what corrective action is needed?
Filling station					
1	**Is the filling station hose dirty?** Contaminants could enter the water cart vessel if the filling hose (or pipe) is dirty. This could also happen if the hose is stored in a place where it could get dirty when it is not in use (e.g. in a wet area, on the ground).	❑	❑	❑	
2	**Is drainage inadequate, which could allow water to accumulate in the filling area?** Stagnant water could contaminate the filling area if there is no drainage system in place. This could also happen if the drainage system is damaged or blocked (e.g. from leaves, sediment). This is especially likely after rain. *Note* – the presence of pooled water during the inspection may indicate poor drainage.	❑	❑	❑	
3	**Is the fence or barrier around the filling station missing or inadequate?** Animals or unauthorized people could contaminate or damage the filling station area if the fence or barrier around the filling station is missing. This could also happen if the fence or barrier is broken or poorly built (e.g. has large gaps), or the entry point (e.g. gate) does not close securely.	❑	❑	❑	
4	**Can sources of pollution be seen in the filling station area (e.g. open defecation, animals, rubbish, commercial activity, open drains, fuel storage/disposal)?** The presence of animals or faeces on the ground close to the filling area poses a serious risk to the safety of the drinking-water. Contaminants from other waste (e.g. household, agricultural, industrial) could be washed into the area during rain and contaminate the water during filling.	❑	❑	❑	
Water cart					
5	**Has the water cart vessel been used to store liquids other than drinking-water?** Contaminants could enter the water if liquids other than drinking-water have been stored in the vessel. This could include if the vessel has stored water of lesser quality, or human/animal waste, chemicals or fuels.	❑	❑	❑	

SANITARY INSPECTION FORM: Filling station and water cart

Sanitary inspection questions		NA	No	Yes	If Yes, what corrective action is needed?
6	**Are there any signs of contaminants inside the vessel?** The presence of animals or faeces inside the vessel is a serious risk to the safety of the drinking-water, and indicates that harmful microorganisms are present. Sediments may also contain harmful microorganisms and other contaminants (such as metals) that can affect the safety or acceptability of the water.	❑	❑	❑	
7	**Is the vessel inspection hatch or filling hatch lid missing or in poor condition?** Contaminants could enter the vessel (e.g. from contaminated water following rain, entry of animals) if the inspection hatch or filling hatch lid is missing (or open, unlocked). This could also happen if the lid is damaged (e.g. deep cracks, severely corroded, does not fit tightly when closed).	❑	❑	❑	
8	**Is the vessel cracked or leaking?** Contaminants could enter the vessel if it is damaged (e.g. with deep cracks, severely corroded). A leaking vessel could also result in stagnant water contaminating the area, as well as water loss.	❑	❑	❑	
9	**Is the vessel discharge hose dirty?** Contaminants could enter the water if the discharge hose is dirty. This could also happen if the hose is stored in a place where it could get dirty when it is not in use (e.g. stored in a wet area, on the ground, or with no end caps in place during storage).	❑	❑	❑	
10	**Are the air vents poorly designed so that contaminants could enter the vessel?** Contaminants could enter the vessel (e.g. road dust, insects, rodents) if the air vents are facing upwards, or are not covered with a vermin- and dust-proof screen.	❑	❑	❑	
11	**Is the vessel discharge tap dirty or in poor condition?** Contaminants could enter the water during delivery to the user if the vessel discharge tap is dirty. This could also happen if the tap is damaged (e.g. broken, severely corroded) or leaking. A leaking tap could also result in water loss.	❑	❑	❑	
12	**Does the vessel water lack adequate disinfection?**[c,d] Failure to adequately disinfect water with chlorine (or provide an alternative means of disinfection) can result in unsafe drinking-water being supplied.	❑	❑	❑	

SANITARY INSPECTION FORM: Filling station and water cart

Sanitary inspection questions		NA	No	Yes	If Yes, what corrective action is needed?
General					
13	**Is the filling station or water cart excluded from routine maintenance and quality control programmes?**[d] Failure of the responsible management entity to routinely inspect, maintain and monitor the quality of water at the filling station or water cart may impact the quality of the drinking-water supplied.	❑	❑	❑	
	Total number of Yes responses				

[d] Risk factor is not illustrated in Figure 1. The response to this question may be determined based on interview with the caretaker, operator or management entity as appropriate. Check activity log books for confirmation. Provide further information in Section C to support your answer where necessary.

C. ADDITIONAL DETAILS

Include any additional remarks, risk factors,[e] recommendations or observations (e.g. problems with the taste, odour or appearance of the water). Attach additional sheets and photographs as needed.

[e] These risk factors should be considered for future inclusion in Section B.

D. INSPECTION DETAILS

Name of inspector: _____

Organization: _____

Designation/title of inspector: _____

Signature: _____ Date: _____

Name of water supply representative: _____

Contact number (if available): _____

Signature (if available): _____ Date: _____

World Health Organization
Water, Sanitation, Hygiene and Health Unit
Avenue Appia 20, 1211 Geneva 27, Switzerland
Email: gdwq@who.int
Website: https://www.who.int/health-topics/water-sanitation-and-hygiene-wash

World Health Organization

Filling station and water cart

This technical fact sheet provides background information on a filling station and water cart, which supports the sanitary inspection of a drinking-water supply.

A filling station provides drinking-water in bulk quantities. This can be provided to a water cart,[a] which can then deliver the drinking-water to users (e.g. to fill a household storage tank).

A typical filling station supply chain includes a water source (e.g. mains supply from a piped distribution network), filling point and a water cart vessel (typically ranging in size from jerry cans [litres] on a cart to a larger vessel on a motor vehicle [kilolitres]).

Filling stations and water carts provide an interim approach to water supply where water services, particularly piped supplies, are inadequate to meet all needs of users. Water carting may also be used to supplement primary water sources during emergency situations (e.g. a contamination event in a piped network, major supply outage).

The water from the filling station should be appropriately treated/disinfected, and delivered to the water cart vessel using a clean hose.

The water carter should store, transport and deliver the water in a sanitary way (i.e. using a clean vessel dedicated to drinking-water only, which is protected from contamination, with clean discharge hoses and fittings). If chlorine disinfection is practised, there should be an adequate free chlorine residual concentration to help protect the water from harmful microorganisms during delivery and user storage and handling.[b]

Figure 1 shows a common type of filling station and water cart. This figure shows a typical design. Other designs can also provide safe drinking-water.

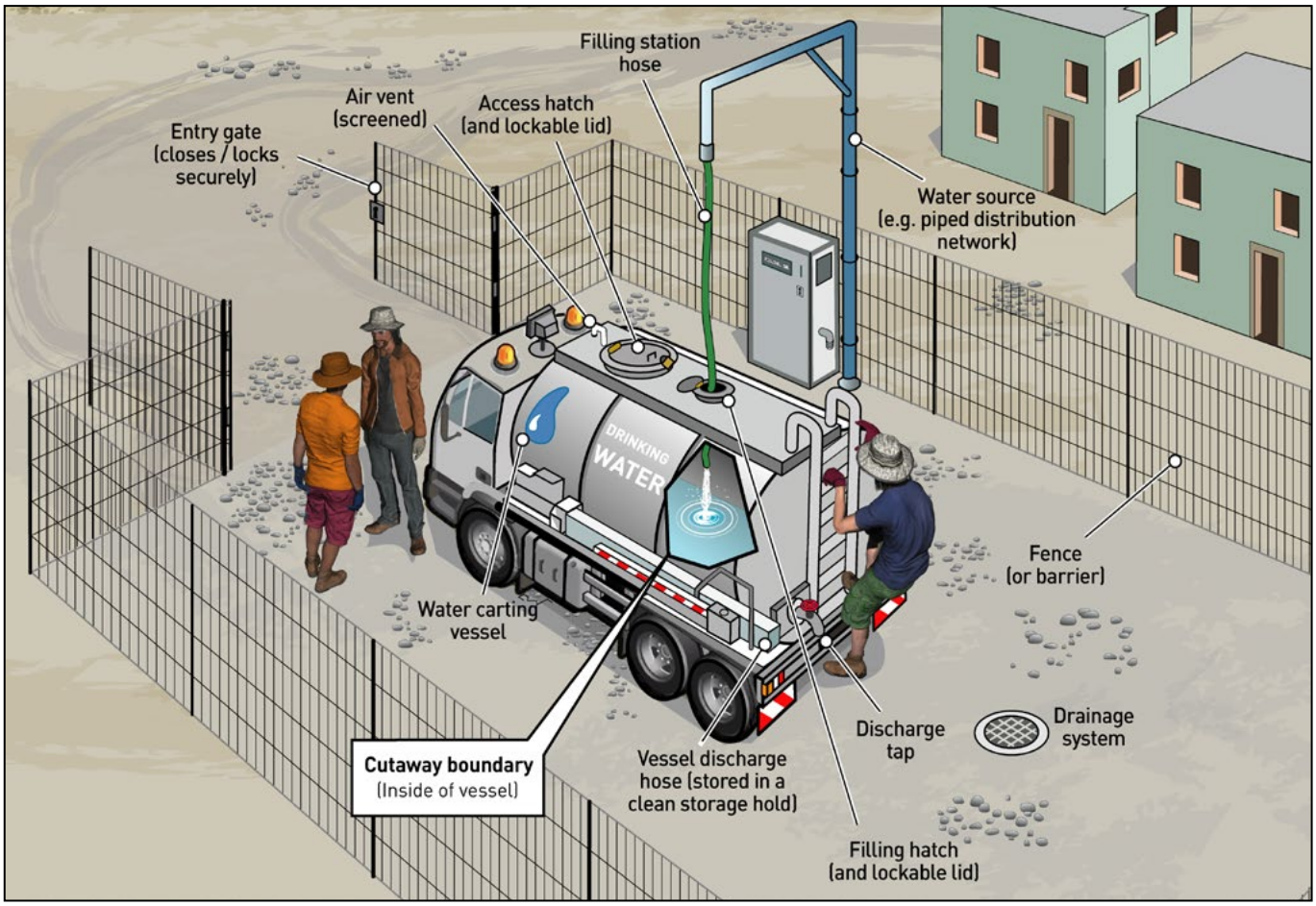

Figure 1. A common filling station and water cart vessel in a sanitary condition

[a] Also referred to as a water truck or water tanker.

[b] For guidance on adequate chlorine disinfection, refer to the *Management advice sheet.*

Typical risk factors associated with filling stations and water carts are presented in the corresponding *Sanitary inspection form.*

Filling stations and water carts typically include the following main components.

Filling station

- **Water source:** Typically provided from a piped distribution network, or from surface water or groundwater sources (e.g. river, borehole, spring). The source water should be treated/disinfected as required to ensure it is safe for human consumption.
- **Filling station hose:** Delivers drinking-water from the filling station to a water cart vessel. The filling station hose (or pipe) should be used for drinking-water only. When not in use, the filling hose should be stored in a sanitary manner (e.g. raised off the ground, capped end).
- **Drainage system:** Directs water away from the filling station area to a drainage system. The drainage system should slope down from the filling area. This prevents water ponding and stagnating, which could contaminate the filling area.
- **Fence or barrier:** A physical barrier to prevent animals or unauthorized people from accessing the filling station and contaminating or damaging the components. The fence or barrier should have an entry point (e.g. a gate) that can be closed tightly and latched shut/locked.

Water cart

- **Water cart vessel:** Stores the drinking-water from the filling station before delivery to the user. Vessels are typically made from high density polyethylene (HDPE), polyvinylchloride (PVC) or stainless steel. The vessel should be used to transport drinking-water only, and this should be clearly marked on the vessel in the local language(s).

  The vessel should have a sump (not shown in Figure 1) that allows the vessel to be emptied for cleaning and maintenance. The sump should be located at the lowest point of the vessel floor to ensure the vessel can be drained completely.
- **Vessel filling hatch:** Allows drinking-water from the filling station to be delivered to the water cart vessel. The filling hatch should have a lid that is tightly fitting and lockable to stop contaminants from entering the vessel (e.g. insects, dust), and to stop unauthorized access by people.
- **Vessel inspection hatch:** Allows access to the vessel for inspection or operations and maintenance. The inspection hatch should have a lid that is tightly fitting and lockable to stop contaminants from entering the vessel, and to stop unauthorized access by people. *Note* – in some cases, the inspection hatch may also act as a filling hatch.
- **Vessel discharge tap:** Allows water to be discharged from the vessel (via a discharge hose) in a sanitary way and with minimal spillage or wastage. The tap should be raised off the floor-level of the vessel to minimize the risk of withdrawing sediment from the bottom of the vessel during use. The tap also allows easy collection of water quality samples for analysis.
- **Vessel discharge hose:** Delivers drinking-water from the vessel tap to a point of delivery (e.g. household storage tank). The discharge hose should be used for drinking-water only. When not in use, the hose should be stored in a sanitary manner (e.g. a dedicated clean, dry storage hold, off the ground, capped ends).
- **Vessel air vent:** Allows ventilation in the vessel. The air vent should be facing downwards and have a vermin- and dust-proof screen to stop contaminants entering the vessel.

Additional considerations

Before a new vessel is used to store or transport drinking-water, cleaning and disinfection is required (e.g. with chlorine).[c] Ideally, water quality testing should then be conducted before the vessel is commissioned to confirm the water is safe for consumption. Periodic disinfection of the vessel and testing may also be required (e.g. after maintenance).

When purchasing new water carting vessels or rehabilitating old ones, any materials used (e.g. vessel material, hoses, taps, valves, fittings) should be safe for contact with drinking-water (e.g. using materials approved through an appropriate certification scheme).

[c] For guidance on disinfecting water storage tanks, refer to Technical notes on drinking-water, sanitation and hygiene in emergencies: cleaning and disinfecting water storage tanks and tankers (WHO & WEDC, 2013).

World Health Organization
Water, Sanitation, Hygiene and Health Unit
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Email: gdwq@who.int
Website: https://www.who.int/health-topics/water-sanitation-and-hygiene-wash

Filling station with water cart

This management advice sheet provides guidance for the safe management of a drinking-water filling station and water cart, which supports the sanitary inspection of a water supply.

Guidance for typical operations and maintenance (O&M) activities is provided in Table 1, including suggested frequencies for each activity. These activities are important for keeping the filling station and water cart in good working condition and protecting drinking-water quality.

Table 2 lists potential problems that may be identified during a sanitary inspection, and provides basic corrective actions to consider for each problem.

This management advice sheet can also support routine management and monitoring practices, which are required to help ensure the ongoing safety of the water supply.

A. OPERATIONS AND MAINTENANCE

Basic O&M can usually be carried out by a trained caretaker or operator (e.g. simple maintenance tasks such as cleaning the filling station area, cleaning the water cart vessel). Larger repairs and maintenance tasks (e.g. repairing the water cart vessel) may need skilled labour which can be provided by local craftspeople, or with support from outside of the local area.

Use of multiple water sources for the filling station or water cart may be needed to help ensure an adequate quantity of drinking-water to meet user needs. Adequate treatment/disinfection are required before consuming the drinking-water if any of the water sources are vulnerable to contamination, or if the water could be contaminated due to unhygienic storage and handling during transport, or by the user in the home.

The condition of the filling station components and water cart vessel should be inspected routinely to help prevent contaminants entering the water supply. Any damage or faults should be repaired immediately (e.g. damaged hoses, broken fence, leaking vessel, damaged air vent screen). Hoses, taps and related fittings (e.g. clamps, nozzles) should be clean and stored in a sanitary way to protect them from contamination (e.g. in a clean and dry dedicated storage hold, off the ground, capped ends).

Standard operating procedures (SOPs) should be developed for important O&M tasks (e.g. inspecting the water cart vessel, cleaning and disinfection of the vessel). These should be followed by trained individuals so the work is carried out safely and the vessel is not contaminated during the work.

Where chlorine disinfection is practised, water cart operators should have access to a chlorine testing kit. Operators should test the free chlorine residual concentration of the vessel water before leaving the filling station, and as required, before delivery to the user, and record the results (e.g. in a log book). As needed, batch chlorine disinfection of the vessel should be carried out to ensure that adequate chlorination is achieved (with all related activities conducted by trained operators according to SOPs).[a] Chemicals (e.g. chlorine) or testing reagents should be used before their expiry date and stored appropriately according to manufacturer's instructions.

[a] Where chlorine disinfection is practised, the free chlorine residual concentration should be at least 0.2 mg/L at the point of use. This means that the free chlorine residual concentration in the water cart vessel should be higher (e.g. at least 0.5 mg/L at pH less than 8 after at least 30 minutes contact time) - this can allow for chlorine decay during delivery, and subsequent storage and handling at the household level. Note that chlorine effectiveness is impacted by several factors including turbidity, pH and temperature. Chlorine doses or contact times will need to be adjusted to ensure adequate chlorine residual concentrations based on the local context. The free chlorine residual concentration in the water should also consider user acceptability. For more information, refer to Technical notes on drinking-water, sanitation and hygiene in emergencies: measuring chlorine levels in water supplies (WHO & WEDC, 2013).

The water cart vessel should be used for drinking-water only - no other liquids, including water of lesser quality, should be stored in the vessel. The vessel should be periodically cleaned and disinfected according to SOPs.[b]

The duration of time the water is stored in the vessel and the weather conditions (e.g. very hot conditions), can affect water quality in terms of the microbiological safety or taste and odour issues. If the water is chlorinated and stored in the vessel for long periods without use (e.g. more than several days), the free chlorine residual concentration of the stored water should minimally be tested to ensure it is adequate before it is delivered to users.[a]

To ensure users can be contacted if contamination is detected, water cart operators should maintain a record of the full details of each water delivery.[c]

Table 1. Guidance for developing an operations and maintenance schedule

Frequency	Activity
Before each filling/ delivery	*Filling station* • Check the filling hose is clean. Clean and disinfect it (e.g. with chlorine) as needed. *Water cart* • Check the discharge hose and tap are clean. Clean and disinfect them (e.g. with chlorine) as needed. • Where chlorination is practised, check the free chlorine residual concentration in the vessel. Optimize the chlorine concentration either upstream (e.g. at a water treatment plant) or within the vessel as needed.[a,b]
Daily to weekly	*Filling station* • Check and clean the filling station area, including the filling hose. Store the hose in a sanitary way (e.g. off the ground, fully drained). • Check that the drainage system is clear and functioning. Remove debris or repair as needed. • Check that the fence or barrier is in good condition and that the entry point (e.g. gate) can be closed securely and latched shut/locked. Repair as needed. *Water cart* • Check and clean the discharge hose and tap. Store the hose in a sanitary way (e.g. off the ground in a storage hold, fully drained). • Check that the air vent is in place and in good condition, with a protective vermin- and dust-proof screen securely fitted. Repair or replace damaged parts. • Check that the inside of the vessel is clean (e.g. free from animals, faecal material, sediment accumulation). Clean and disinfect (e.g. with chlorine) as needed.[b]
Monthly to every three months	*Filling station* • Check the filling station hose (or pipe) is in good condition. Repair or replace the hose as needed, then clean and disinfect it (e.g. with chlorine). *Water cart* • Check the discharge tap is in good condition. Repair or replace the tap as needed, then clean and disinfect it. • Check the discharge hose and storage hold are in good condition. Repair or replace damaged components as needed. • Check the vessel for signs of damage or failure. Repair as needed. • Drain the water cart vessel, remove sediment and clean the internal vessel walls (e.g. using a brush and clean water), and then disinfect the vessel (e.g. with chlorine).[b] *Note* – this should also be done as the need arises if the vessel is contaminated (e.g. if vermin is found inside the vessel).
As the need arises[d]	• Repair or replace filling station or water cart components. • Perform maintenance tasks (e.g. tap maintenance). • Monitor water distribution to identify changes (e.g. during periods of drought). • Ensure procurement of any materials in contact with drinking-water and water treatment chemicals (where used) are safe for drinking-water use.

[b] For guidance on O&M, including safely cleaning and disinfecting water cart vessels, refer to Technical notes on drinking-water, sanitation and hygiene in emergencies: cleaning and disinfecting water storage tanks and tankers and Delivering safe water by tanker (WHO & WEDC, 2013). Cleaning and disinfecting the vessel is required following a contamination event (e.g. presence of animals in the vessel; *E. coli* detection). *Note* – in water scarce areas, consult with local health authorities before draining a water cart vessel to ensure that the risk to water quality justifies the loss of water. Alternative water supply arrangements may then be needed to ensure that users have sufficient water quantity to meet domestic needs.

[c] This may include: driver's name; date of vessel filling; name of the filling station; free chlorine residual of the water at the filling station, in the vessel and at the point of delivery to the user; date of delivery, name, address and contact details of each user receiving a delivery, and the quantity of water they received; cleaning and maintenance record for the water cart.

[d] See Table 2 for potential issues that could trigger these activities.

General notes

- The suggested frequencies in Table 1 represent a minimum requirement and may need to be increased depending on the local context. A suitable O&M schedule should be made for each filling station and water cart supply chain including who is responsible for performing the work. Completion of activities as part of an O&M schedule should be recorded, with additional detail on any issues identified and corrective actions undertaken.
- Only persons with relevant training and skills should undertake the activities in Table 1. Appropriate safety measures should be taken if entering the water cart vessel (e.g. inspection, maintenance etc.) or handling disinfection products.
- For guidance on appropriate frequencies for monitoring (e.g. sanitary inspections and water quality testing), refer to Guidelines for drinking-water quality: small water supplies (WHO, 2024).

B. PROBLEMS AND CORRECTIVE ACTIONS

Each problem in Table 2 is linked to the same question number in Section B of the *Sanitary inspection form.* Where relevant, corrective actions should be completed by trained individuals according to SOPs. Where needed, develop awareness raising and education programmes, and if necessary, local rules or regulations, to support safe drinking-water management in the context of the guidance provided in Table 2.

If problems are identified that represent an immediate threat to drinking-water safety (e.g. likely presence of faecal contamination in the water supply, positive *E. coli* detection), consider what immediate actions should be taken to minimize the risk to public health (e.g. advise users to seek an alternative safe drinking-water source, disinfect the water at the point of use).

Table 2. Common problems associated with a filling station and water cart, and suggested corrective actions

Question	Problem identified	Corrective actions to consider
Filling station		
1	The filling station hose (or pipe) is dirty, or stored in an unsanitary way, which could allow contaminants to enter the water cart vessel.	• If the hose is dirty, clean and disinfect it (e.g. with chlorine). • If there is no dedicated sanitary storage place for the hose, install a storage space for it (e.g. a hook raised off the ground, capped end). • Communicate the importance of routine cleaning/maintenance, and returning the hose to the dedicated storage place after each use. Consider installing information signs at the filling point to remind users of the risk.
2	The drainage system is inadequate (e.g. absent, damaged or blocked drain), which could result in stagnant water contaminating the filling area.	• If a drainage system is absent, dig a temporary channel to divert water away from the water filling area. Construct a permanent solution as soon as possible. • If a drainage system is not working correctly, consider whether maintenance is needed (e.g. repair, cleaning), or if deepening, widening or extending is required.

Question	Problem identified	Corrective actions to consider
3	The fence or barrier around the filling station is missing or inadequate, which could allow animals or unauthorized people to contaminate the filling area or damage the filling station components.	• If absent, construct a robust fence or barrier with a lockable gate that closes securely. • If a fence or barrier is present but inadequate to prevent access, repair or replace it. • If the entry point (e.g. gate) to the filling station area is damaged and/or does not close securely, repair or replace it.

4	There are sources of pollution (e.g. open defecation, animals, rubbish, commercial activity, open drains) around the filling station that could contaminate the water filling area.	• Where practical, remove the pollution (e.g. remove animal faeces, rubbish). Communicate the importance of maintaining the filling area in a clean condition.
		• Consult with local authorities and users to consider:
		  ○ appropriate actions to relocate or eliminate the source of pollution
		  ○ other actions to minimize the issue from occurring again (e.g. awareness raising, signage, enforcement measures).

Water cart		
5	The water cart vessel has been used to store liquids other than drinking-water, which could contaminate the vessel.	• Stop the practice of storing other liquids in the vessel immediately. • Clean and disinfect the vessel (e.g. with chlorine),[b] or replace the vessel if deemed necessary (e.g. if the vessel has previously stored animal or human waste, chemicals, petroleum products). • Communicate to operators the importance of storing only drinking-water in the vessel. Consider installing information signs on the vessel to remind operators of the risk.
6	There are signs of contaminants in the vessel (e.g. animals, faeces, sediment build-up) that could present a serious risk to water quality.	• Remove the contaminants immediately if possible. • Consider what immediate actions should be taken to minimize the risk to public health. • Drain, clean and disinfect the vessel (e.g. with chlorine).[b] • Consider appropriate measures to minimize the risk of contamination entering the vessel from this source in the future (e.g. locking the inspection hatch lid when not in use).
7	The inspection or filling hatch lid is missing (or open, unlocked), or it is in poor condition (e.g. deep cracks, severely corroded, does not fit tightly when closed), which could allow contaminants to enter the vessel.	• If the hatch lid is missing, or it is in poor condition, provide a temporary seal (e.g. impermeable plastic sheeting) over the hatch to minimize the entry of contaminants. Repair or replace the hatch and/or lid as soon as possible. • If the hatch lid is open or unlocked, communicate the importance of closing and locking the lid securely when it is not in use.
8	The vessel is cracked or leaking, which could allow contaminants to enter the vessel, or result in water loss.	• If the vessel is cracked or leaking, engage local craftspeople to repair or replace the vessel as required. Then clean and disinfect the vessel (e.g. with chlorine).[b]

Table 2. ...continued

Question	Problem identified	Corrective actions to consider
9	The vessel discharge hose is dirty, or stored in an unsanitary way, which could allow contaminants to enter the water cart vessel.	• If the hose is dirty, clean and disinfect it (e.g. with chlorine). • If there is no dedicated sanitary storage place for the hose, install a storage space for it (e.g. a dedicated clean, dry storage hold, off the ground, capped ends). • Communicate to operators the importance of routine cleaning/maintenance, and returning the hose to the dedicated storage place after each use. Consider installing information signs on the water cart to remind operators of the risk.
10	The air vents are poorly designed (e.g. facing upwards) or unprotected (e.g. without a vermin- or dust-proof screen), which could allow contaminants to enter the vessel.	• If the air vents are facing upwards, modify the vents so they face downwards. • If the air vent screens are absent, cover the vents with vermin- and dust-proof screens. • If the air vent screens are damaged (or have wide gaps), replace with functioning screens.
11	The vessel discharge tap is dirty or in poor condition (e.g. damaged, corroded, leaking), which could allow contaminants into the water during delivery, or result in water loss.	• If the vessel tap is unclean, clean and disinfect it (e.g. with chlorine). • If the tap is in poor condition, repair or replace it as needed, then clean and disinfect it. • Communicate the importance of routine cleaning/maintenance to the operators.
12	The water in the vessel is not adequately disinfected.[a]	• Develop the necessary SOPs and provide operator training on adequate disinfection practices (including on the use of free chlorine residual test kits where chlorination is practised, and turbidity and pH where possible). • Ensure adequate provision is made to procure chlorine (or an appropriate alternative means of disinfection), along with water quality testing equipment and consumables for monitoring. • Ensure disinfection is practised correctly and consistently, and is optimized through routine monitoring and water quality testing.
General		
13	The filling station and water cart is excluded from routine maintenance and quality control programmes.	• Develop and implement an appropriate routine maintenance and quality control programme, liaising with relevant authorities if appropriate. • Where needed, ensure adequate provision is made for water quality testing equipment and consumables, alongside appropriate SOPs and training for operators.

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