

Sanitary Inspection Form Household Slow Sand Filters

What to bring with you

You may want to bring the following materials with you for **household slow sand filter** sanitary inspections:

- A measuring cup or vessel with milliliters marked on it to measure the flow rate (between 75 and 600mL, depending on the filter model you are inspecting – see table in question 11)
- A pencil that works when wet, to mark the water level on the inside of the filter
- A level to check if the filter is level
- A scoop to remove water from the top of the filter or sand from the filter, if needed
- Chlorine or soap to show users how to wash the lid, diffuser, outlet pipe or storage containers
- Extra diffuser basins and filter lids to replace damaged ones
- Properly prepared filter sand to add to filters that need adjustment
- Safe storage containers for households that do not have one


How to fill out this sanitary inspection form


For definitions and guidance, see the Technical Information Sheet and Operation & Maintenance Sheet.

Note: A thorough sanitary inspection consists of inspecting all parts of the water system. In addition to this sanitary inspection, inspections of the **water source** and **household practices** should also be conducted.

This form is intended to be written all over. In each question, feel free to circle, highlight or underline text based on what you see or hear during the inspection. Add notes that will be useful when arranging for someone else (like a technician) to come back and address risks.

This inspection is based on both **observations** and **interviews**. There are 17 questions.

When you see this symbol , it means answer the question based on your **observations** (questions 1 to 11)

When you see this symbol , it means answer the question by **asking the user** (questions 12 to 17)

Questions & Risks

If you answer "yes" to **every** bullet point listed below the question in the first column, mark "Yes" in the second column. This means there is Low Risk.

If you answer "no" to **any** of the bullet points below the question, mark "No" in the third column. Marking "No" means there is a High Risk and one or more actions are needed. Circle or highlight the bullet point(s) for which the answer is "no".



Actions

For any bullet point for which the answer is "no", an action is needed. Mark the action that you think is required in the right-hand column. If you think other actions are needed, write them in the 'What action is needed' column or wherever you have room.

This form was filled out by:



Name	Job title
Signed	Organization
Date of inspection	Weather during inspection: Rain/recent rain <input type="checkbox"/> Dry <input type="checkbox"/>

Fill out as much information as you are able in the table below. Shaded topics are the most important.


 Information about the household	
Name of the family (user):	
Filter or house location (for example: address, GPS location, house name, village, district, province/state):	
Number of people using water from the filter:	
Who provided/ installed this filter	
Month/ year the filter was installed:	
Filter reference number (if applicable):	
 Information about this water system	
What water source does the household use? (tick all that apply)	
Dug well <input type="checkbox"/>	Borehole/ tubewell <input type="checkbox"/>
Spring <input type="checkbox"/>	Piped supply <input type="checkbox"/>
Surface water (river or pond) <input type="checkbox"/>	
Rainwater <input type="checkbox"/>	
Other (Please state) <input type="checkbox"/>	
Has a sanitary inspection of the water source been conducted within the last 12 months? (if no, please conduct one in addition to this inspection)	
Yes <input type="checkbox"/>	
No <input type="checkbox"/>	
Is any water treatment done before the filter?	
None <input type="checkbox"/>	Settlement <input type="checkbox"/>
Other (please describe) <input type="checkbox"/>	
Is any water treatment done after filtration? (tick all that apply)	
Boiling <input type="checkbox"/>	Pasteurization <input type="checkbox"/>
Chlorination <input type="checkbox"/>	Ceramic filtration <input type="checkbox"/>
UV disinfection <input type="checkbox"/>	
Solar disinfection <input type="checkbox"/>	
Membrane filtration <input type="checkbox"/>	
Other <input type="checkbox"/>	

Drinking water quality testing (optional)	
Sampling location	Sample number
Unfiltered water	
Water coming out of the filter spout	
Treated water storage container	
Other (describe where)	

The complete, thorough inspection takes about 40 minutes. If you don't have enough time, you can answer only the most important questions, which are shaded (this takes about 15 minutes).


 Water transportation and storage	Low risk	High risk	What action is needed?
<p>1. Is the unfiltered water stored and handled safely?</p> <p>Check if:</p> <ul style="list-style-type: none"> • The unfiltered water is clear • The water transport containers are clean <p><i>Clear water is preferred, but the filter will still work with turbid water – it will just need more maintenance. Water should be transported in a clean container to avoid contamination of the unfiltered water. Ideally, transport containers should have a lid to reduce contamination.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Water is turbid:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Discuss with user if there is a clearer water source they can use. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>or</p> <ul style="list-style-type: none"> <input type="checkbox"/> Show how to settle and decant the water before filtration. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>Transport container is dirty: Show user how to clean the container.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later
 Filter location	Low risk	High risk	What action is needed?
<p>2. Is the filter protected from the weather?</p> <p>Check if the filter is protected from:</p> <ul style="list-style-type: none"> • Rain • Direct sunlight at any point in the day <p><i>Heavy rain may damage the filter and safe water storage container. A filter exposed to sun or cold can change the water temperature, which affects the biolayer or could cause pathogens to grow in the water.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Filter is exposed to weather:</p> <ol style="list-style-type: none"> 1. Help the user choose a better location for the filter, if possible. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>then</p> <ol style="list-style-type: none"> 2. Arrange for a technician to move the filter. <ul style="list-style-type: none"> <input type="checkbox"/> Arranged by me <input type="checkbox"/> Needs to be arranged
<p>3. Is the filter on a flat, stable surface?</p> <p>Check that:</p> <ul style="list-style-type: none"> • The floor is stable and the filter does not move when people walk around. • The filter is level. • The surface of the sand is flat and level. <p><i>An unsteady surface can cause the filter sand and biolayer to be disturbed.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Filter is not level: Put shims or small rocks under the filter to make it level. Make sure that the filter is stable and will not wobble.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>Filter is not on a stable surface:</p> <ol style="list-style-type: none"> 1. Help the user choose a better location for the filter, if possible. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>then</p> <ol style="list-style-type: none"> 2. Arrange for a technician to move the filter. <ul style="list-style-type: none"> <input type="checkbox"/> Arranged by me <input type="checkbox"/> Needs to be arranged later

<p>4. Are the filter and filtered water storage container away from sources of contamination?</p> <p>Check that the filter and filtered water container are:</p> <ul style="list-style-type: none"> • Away from animal or human excrement • Where animals cannot access them • Away from household waste <p><i>If the filter and filtered water are stored in a dirty area, it could re-contaminate the filtered water.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>Filter is near contamination sources: Help the user reduce risk by explaining the need to keep the area around the filter clean and discussing the following options.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Choose a different location for waste storage and disposal. <input type="checkbox"/> Recommend they build a fence or barrier between the filter and animals. <input type="checkbox"/> Help the user create a waste disposal pit. <ul style="list-style-type: none"> <input type="checkbox"/> Discussion with user done by me <input type="checkbox"/> Discussion needs to be done later <p>or Choose a better location for the filter.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Arrange for a technician to move the filter
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 Filter condition	Low risk	High risk	What action is needed?
<p>5. Is the filter body in good condition?</p> <p>Check that the filter body:</p> <ul style="list-style-type: none"> • has no visible cracks or leaks <p><i>Cracks or leaks in the filter body can cause the sand to dry out, sand to be lost, or the water in the filter to be contaminated. Leaks that cause water to pool around the filter can lead to the filter not being used.</i></p> <p><i>Besides cracks, other signs of leaks include: the floor is wet around the filter, the water level is less than 4 cm deep (although there could be other reasons for this – in question 7) or the water level drops between uses.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>Filter body is cracked or leaking:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Arrange for a technician to come and decide whether the filter can be repaired or needs to be replaced.
<p>6. Are the filter lid and diffuser in good condition?</p> <p>Check that the filter:</p> <ul style="list-style-type: none"> • Has a lid that is clean and not damaged • Has a diffuser basin that is clean and not damaged <p><i>Missing, broken or dirty lids can lead to contamination of the unfiltered water. A broken or missing diffuser allows water poured into the filter to damage the biolayer, reducing the filter effectiveness.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>The lid or diffuser is dirty: Show the user how to clean it using chlorine or soap mixed with clean water.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>The lid is damaged: Provide a replacement or ask the user to repair it or make a new lid.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>The diffuser basin is damaged: Provide a replacement or get a technician to repair it, if possible.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later

<p>7. Is the filter outlet tube/pipe clean and in good condition?</p> <p>Check that the outlet tube/pipe:</p> <ul style="list-style-type: none"> ● Is clean ● Is not broken or damaged <p><i>A dirty outlet can re-contaminate treated water, even if it looks clean, but people touch it with their fingers. A broken outlet tube/pipe changes the water level in the filter which affects the biolayer. This is more of a problem for filters that have plastic outlet pipes on the outside of the filter body (plastic and stainless-steel filter bodies).</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>The outlet tube/ pipe is dirty: Show the user how to clean it, using soapy or chlorinated clean water.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>The outlet tube/pipe is broken:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Arrange for a technician to come repair or replace it
<p>8. Is the treated water storage container clean, suitable and in good condition?</p> <p>Check that the storage container:</p> <ul style="list-style-type: none"> ● Has a lid and a tap or a spout ● Is clean ● Is not broken or cracked <p><i>Safe water storage containers should have a tap or spout that allows water to be removed without dipping anything in the water. The container should be clean on the inside and outside. An uncovered or dirty water storage container allows the filtered water to be re-contaminated.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>The storage container is unsuitable, broken or cracked: Provide a safe storage container or help the user figure out where to get one. Discuss with the user how treated water can be re-contaminated.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>The storage container is dirty: Show the user how to clean it using chlorine or soap mixed with clean water. Discuss with the user how treated water can be re-contaminated.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later
<p>9. Is the water level 4 to 6 cm above the sand surface (when the filter is not in use)?</p> <p>While water is not coming out of the spout, check that the top of the sand is 4 - 6 cm from the top of the water (roughly knuckle deep from the ends of your fingers).</p> <p><i>If the water level is less than 4 cm, the filter may dry out between uses. If the water level is greater than 6 cm, the biolayer will die from lack of oxygen. If there is no water above the sand and the sand is dry, the filter may not have been used for a few days or there is something significantly wrong with it.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>Water depth above the sand is more than 6 cm: Add properly prepared filter sand. Then pour water through the filter and check the level again after it stops flowing out</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>Water depth above the sand is less than 4 cm: In case the filter hasn't been used recently, fill the filter with water and check the level again after it stops flowing out. If the water depth is still less than 4 cm, remove some sand. Repeat the entire process until water depth is between 4 to 6 cm.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>There is no water above the sand: Discuss with the household whether something is wrong with the filter, if they will resume using it or if it should be removed.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later

<p>10. Does the water flow freely out of the tube or pipe?</p> <p>Fill the filter reservoir with water and check that:</p> <ul style="list-style-type: none"> • There is no tap on the filter outlet. • There is no hose on the filter outlet. • The outlet tube/ pipe is not blocked or plugged. <p><i>Taps increase the depth of the standing water and the biolayer will die from lack of oxygen. A hose can cause the filter to drain, drying out the sand. A blocked outlet tube/pipe can stop water flowing out of the filter.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>There is a tap on the filter outlet: Remove the tap. Explain to the user that the tap will destroy the biolayer and the filter will not work properly.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>There is a hose on the filter outlet: Remove the hose. Explain to the user that the hose can change the water level, so the filter won't work properly. A better option is to raise the water storage container by placing it on something.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>There is something in the filter outlet tube/ pipe: Remove it.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later 												
<p>11. Is the flow rate acceptable? Fill the filter reservoir to the top. Measure how much water comes out of the outlet tube/pipe in 1 minute. The maximum flow rate depends on the filter model. Circle or highlight your model flow rate in this table:</p> <table border="1"> <thead> <tr> <th>Type of filter</th> <th>Maximum flow rate (ml/min)</th> </tr> </thead> <tbody> <tr> <td>BSF v.10</td> <td>400</td> </tr> <tr> <td>BSF v.9 and Hydrad®</td> <td>600</td> </tr> <tr> <td>200 L blue drum</td> <td>1750</td> </tr> <tr> <td>20 L bucket</td> <td>75</td> </tr> <tr> <td>BOMA (60 L bucket) and Aqua Clara</td> <td>290</td> </tr> </tbody> </table> <p><i>High flow rates are an indication that the sand was not selected and prepared properly. This means the filter won't work well. Low flow rates may indicate a need for maintenance, but the filter is still working well. Very low flow rates are less convenient for the user.</i></p>	Type of filter	Maximum flow rate (ml/min)	BSF v.10	400	BSF v.9 and Hydrad®	600	200 L blue drum	1750	20 L bucket	75	BOMA (60 L bucket) and Aqua Clara	290	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>The flow rate is greater than the maximum for this model:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Arrange for a technician to come and re-install the filter with properly prepared sand <p>The flow rate is less than the maximum: Show the user how to do 'swirl & dump' maintenance. Discuss with the user when to do this maintenance.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later
Type of filter	Maximum flow rate (ml/min)														
BSF v.10	400														
BSF v.9 and Hydrad®	600														
200 L blue drum	1750														
20 L bucket	75														
BOMA (60 L bucket) and Aqua Clara	290														

 Correct and consistent use	Low risk	High risk	What action is needed?
<p>12. Does your drinking water come from the same source every day?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> • Where did you collect this water from? • Do you sometimes use other sources of water in the filter? <p><i>The biolayer adapts to the water that is put into the filter. If the user is often changing water sources, the filter will not work as well. However, changing water sources depending on the season (for example during dry season) may be necessary, and will not have as big of an impact on the quality of the treated water.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Household is using different water sources on a daily basis: Find out why and if there's one source that they could use every day.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later
<p>13. Is the filter still in the same place where it was installed?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> • Was the filter originally installed where it is now? <p><i>Moving the filter could cause the sand to get compacted - possibly plugging the outlet pipe, lowering the sand level in the filter, or making the surface of the sand not level.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Filter was moved:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Arrange for a technician to come and check the flow rate, water level above the sand and for signs of a plugged outlet pipe. The technician can then decide whether the filter is operating fine or needs to be re-installed.
<p>14. Is the filtered water storage container used only for storing filtered water?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> • Do you use this container for anything else besides storing filtered water? <p><i>Using the same container for unfiltered and filtered water will contaminate the filtered water.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Storage container is used for other things:</p> <p>1. Discuss safe water handling practices with the user.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>2. Then choose between these options:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Help the user designate one container to be used for filtered water storage only. If acceptable to the user, label the containers. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later <p>or</p> <ul style="list-style-type: none"> <input type="checkbox"/> If the user doesn't have enough containers and can't afford another, provide a safe storage container. <ul style="list-style-type: none"> <input type="checkbox"/> Done by me <input type="checkbox"/> Needs to be done later

<p>15. Does the user pour one to four batches of water into the filter per day?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> How many times per day do you fill the filter? <p><i>A batch means each time the filter is filled with water. The filter works best when it is used to treat a minimum of 1, and a maximum of 4 batches per day. Pouring more than four batches of water through the filter reduces the quality of the treated water.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>User pours less than one batch of water per day: Explain that the filter won't work properly if they don't put water into it daily.</p> <ul style="list-style-type: none"> Done by me Needs to be done later <p>Users pour more than 4 batches of water per day: Explain that the filter won't work as well if it treats more than 4 batches per day. Ask what they are using the filtered water for and how many people use this filter. Help the user decide how to solve this problem. Some options might be to use filtered water only for drinking or get a second filter.</p> <ul style="list-style-type: none"> Done by me Needs to be done later
<p>16. Is there a sufficient pause period between each batch?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> At what time(s) of day do you fill the filter? (for example, first thing in the morning, at meals) How much time passes before you fill it again? <p><i>A batch means each time the filter is filled with water. Ideally, the batches should be spread out as much as possible during the day: when you wake up, at lunch, at dinner, before bed. The pause period is the time when no water is flowing through the filter. The filter produces the highest quality of water when it has a few hours of pause period in between batches.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>Batches are poured one right after the other: Explain to the user that the filter won't work as well if it doesn't get a break between batches. Together with the user, figure out a schedule that will spread the batches out but also provide enough water for the household, if possible.</p> <ul style="list-style-type: none"> Done by me Needs to be done later
<p>17. Is the filter used every day?</p> <p>Ask the user:</p> <ul style="list-style-type: none"> Are there days when you don't use the filter? How often? For how long? When you start using it again, what do you do? <p><i>Not using the filter for an extended period of time causes the biolayer to die and the sand to dry out. Filters should be used daily to keep the biolayer alive. If the filter hasn't been used for weeks or longer, the sand will be dry and there may be anaerobic bacteria in the bottom of the filter that cause a bad smell and taste.</i></p>	<p>Yes <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>Filter has not been used every day: Explain to the user that the filter will not work properly if it is not used regularly. Together with the user, discuss why it's not used consistently and encourage them to use it every day.</p> <ul style="list-style-type: none"> Done by me Needs to be done later <p>Users move seasonally so the filter must be left unused for part of the year:</p> <ul style="list-style-type: none"> Arrange for a technician to show the user how to restart the filter after periods when it hasn't been used.

