

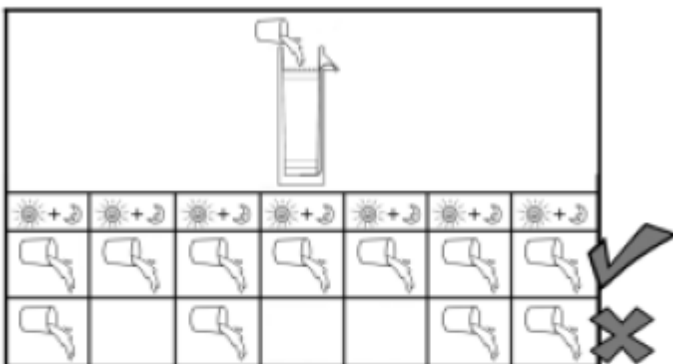
Educating the User

It is very important that users know how to use their filter. When a filter is first being installed, someone must teach them how to use it, and how and when to clean it.

There is a lot of information for users to remember. Repeat visits will be necessary to follow-up with the users in order to answer their questions, remind them of information they have forgotten, teach new information, and demonstrate or affirm how they should use and clean the filter.

How to use the filter

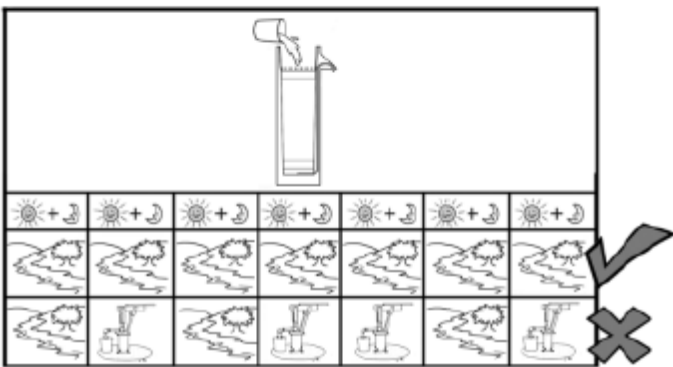
It is very important that users know how to use the filter. When a filter is installed, someone must teach them how to use it and how and when to clean it. Make sure you go over each of these important points with the users at the time of installation.



1. Use the filter every day.

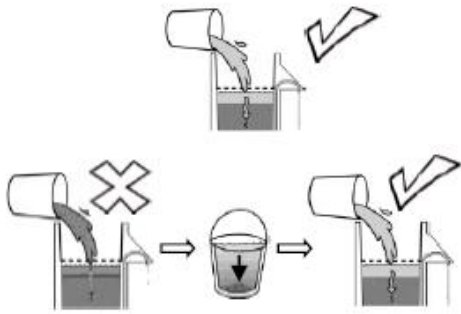
After the filter has stopped flowing, wait at least 1 hour before pouring another bucket of water in. The filter needs time to treat the water. This is the pause period.

DO NOT go more than 2 days without pouring water into the filter. If you go away for more than 2 days, ask someone else to pour water into your filter every day. The filter needs a fresh dose of oxygen and nutrients. If you go too long without adding water, the standing water may evaporate, causing the biolayer to dry out and die.



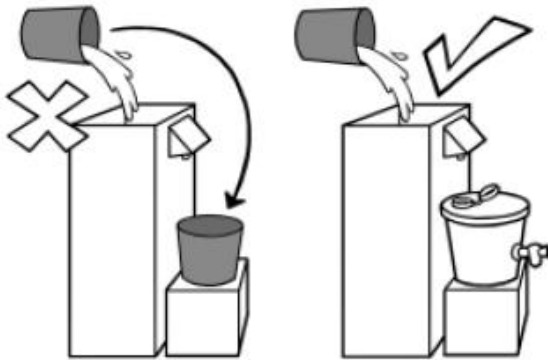
2. Always pour water from the same source into the filter.

If you change sources, the filter will not work as well for a few days. If you use different water sources in different seasons, it is important to disinfect the filtered water for a few days after you change sources.



3. Use the cleanest, clearest water possible in the filter.

If you only have dirty, cloudy water, let it sit in a container until the dirt has settled to the bottom. Then pour the clear water into the filter.



4. Use one container to collect water to pour into the filter, and use a different container to collect the filtered water.

If you use the same container, you will make the filtered water dirty again. Use a safe storage container to catch the filtered water.



Use a safe storage container to catch the filtered water.



5. Disinfect the filtered water.

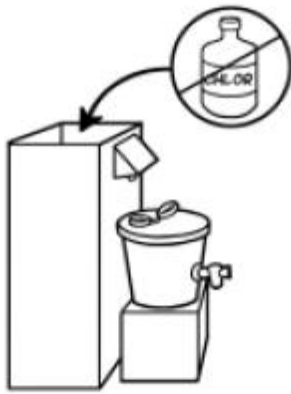
You can disinfect it by adding chlorine drops or chlorine tablets, using SODIS, or boiling the filtered water.

The BioSand Filter removes most of the dirt and pathogens. But for the best, safest water, you should also disinfect it.

Disinfecting the filtered water is especially important:

- **During the first month of using the filter (while the biolayer is still growing)**
- **Whenever you change water sources**
- **In the few days after doing a Swirl and Dump cleaning**

During these times, the biolayer is not working at its peak level. As such, the filter may not be treating water to its best capacity. Disinfecting the water at these times will make sure all pathogens are removed.

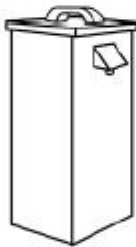


6. **NEVER put Chlorine into the top of the filter.**

Chlorine will kill the biolayer. Without the biolayer, the filter will not work as well.



7. **ALWAYS make sure the diffuser is in the filter when you pour water in.** Never pour water directly onto the sand. This may damage the biolayer.



8. **ALWAYS keep the lid on the filter.** This will keep insects, contaminants and other objects out. It will also keep hands and food from being contaminated by the dirty water and the diffuser in the top of the filter.



9. **Keep the outlet tube open. DO NOT put a hose or tap on the filter outlet tube.** Due to the siphoning effect in the outlet tube, putting a hose on the filter will drain the filter of all its water and may kill the biolayer. Putting a tap on the outlet tube will cause the standing water level to remain too high, which may kill the biolayer.



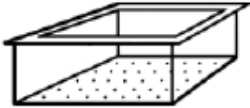
10. **Use the filter only for water. Do not store food in the top of the filter.** Some people store food inside the filter because it is cool. But the inside of the filter is not clean! It collected dirt and pathogens. It will make food dirty and unsafe to eat. Food may also attract animals and insects to the filter.

How to clean the filter

The users must know how to clean the filter. There are 2 ways they must clean the filter.

1. Wash the diffuser, lid, and the outside of the outlet tube.
2. Whenever the flow rate gets too slow, they should do a Swirl and Dump to make the flow rate faster again.

Cleaning the parts of the filter



The diffuser collects dirt and large particles that are in the water. It may get very dirty. The dirt will not harm the drinking water, since the water is filtered after it touches the diffuser. But it is a good idea to clean the diffuser. Cleaning the dirt off the diffuser will help keep the dirt from clogging the sand. It will help keep the flow rate from getting too slow.



It is also good to wash the lid. If the family stores anything on top of the lid, it should be clean. Also, it will look nicer if it is clean.

- Once a week, wash the diffuser and lid in soapy water. Then rinse them in clear water.
- You do not have to use safe, filtered water to wash the diffuser and lid. But the water should be as clean and clear as possible.



- If you don't want to put the lid into the water, you can wipe it with a clean, wet cloth.



It is important to keep the outlet tube clean. Sometimes the outside of the tube can get dirty. This may make the drinking water dirty again. This is one reason the water should be disinfected after being filtered.


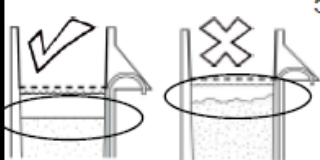




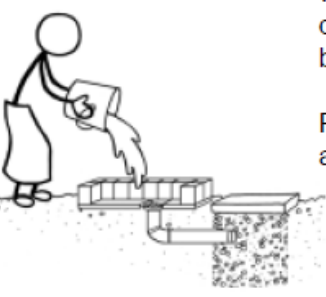


- Once a week, wipe the outside of the outlet tube.
- Use a cloth with chlorine. Let the tube air-dry.
- If you do not have chlorine or bleach, use a wet soapy cloth
- Then use a clean, wet cloth to rinse off the soap. **Use filtered water to clean the outlet tube.**



The user should NEVER put chlorine inside the outlet tube or into the top of the filter!



Swirl and Dump (the user can do this when the flow rate of the filter is too slow)

 <p>1. Take off the lid. Pour water into the filter until the water level is above the diffuser.</p> <p>Take out the diffuser.</p>	 <p>5. Make the top of the sand flat and level.</p>
 <p>2. Put your hand flat on the sand. Swirl the surface of the sand around in a circle a few times.</p>	 <p>6. Wash the lid and diffuser in soapy water. Rinse with clear water.</p>
 <p>3. Use a cup or small bucket to scoop out the dirty water from the top of the filter.</p>	 <p>7. Put the diffuser back in the filter.</p>
 <p>4. Pour the dirty water down a drain or into the bushes.</p> <p>Repeat steps 2, 3 and 4 a few times.</p>	 <p>8. Wash your hands with soap and water. This is important since the top of the sand is very dirty.</p>  <p>9. Pour a bucket of water into the top of the filter.</p> <p>If the flow rate is still too slow, repeat the Swirl and Dump until the flow rate is faster.</p>

Safe water storage

Safe storage means keeping the water from getting contaminated again. If hands, dippers, cups, or anything else touch the water, it will become unsafe to drink again. Open buckets are not safe storage since anything could fall into the bucket and contaminate the water.



There are many designs for safe water containers around the world. **We recommend distributing a safe storage container along with the Filter to ensure each household receives a proper container from the start.** A safe water storage container should have the following qualities:

- Strong and tightly fitting lid or cover
- Tap or narrow opening for pouring water out
- Stable base so it doesn't tip over
- Easy to clean
- Durable and strong
- Containers that are not transparent (not see-through) or that have a colored tint are better than clear bottles. Algae may grow inside clear containers since the sunlight can go through them.

How to clean a safe storage container



1. Wash your hands with soap.



2. Wash the inside and outside of the container and its lid with soap and treated water. It can be boiled, filtered, SODIS or chlorinated water.



3. Empty the soapy water through the container's tap.



4. Rinse the container and lid using treated water. It can be boiled, filtered, SODIS or chlorinated water.



5. Empty the rinse water through the container's tap.



6. Let the container and lid air-dry.



7. Wipe the tap with a clean cloth and chlorine.



8. Put chlorine tablets or drops into the container. Fill the container with treated water. Let it sit for 30 minutes.



9. Empty the chlorinated water through the tap. You can drink this water, or dump it down a drain.

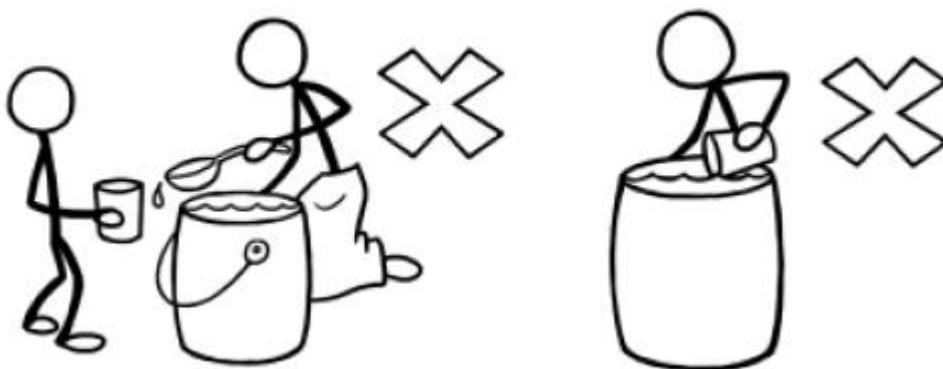
Using your treated water

It is important to protect your treated water and keep it from getting dirty again.

It is best if the safe storage container has a tap. If there is no tap, pour the water out. You should be able to get the water out of the safe storage container without using a cup or dipper.

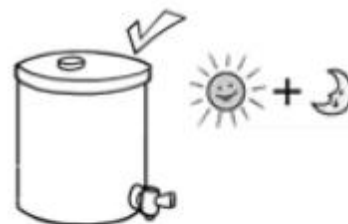


Cups and dippers can be dirty from sitting on the counter or table, or from people touching them with their hands. Dirt and pathogens from hands, a cup or dipper will go into the water. Then the water may make you sick when you drink it.



Use the filtered water as soon as possible. Try to use it all within 1 day. This reduces the change of recontamination.

The first water poured through the filter in the morning will be the best quality (because it has sat in the filter overnight). Save this water for drinking. Use the water that you pour through the filter later in the day for other uses like cooking and washing.



Disinfect the filtered water. You can disinfect it by using chlorine, SODIS, or boiling. Disinfection will kill any pathogens left in the water after filtration. Adding chlorine to your filtered water will also protect it against being contaminated again- the chlorine will kill any new pathogens that get into the water while it is being stored.



Follow-Up with the User

Follow-Up Visits

It is important to visit the users after they start using the filter. People forget the details about how to use and clean the filter, so you will need to remind them. They may also have questions about the filter or about water, sanitation or hygiene. We suggest doing several follow-up visits in the months following installation. This will help ensure that any initial problems with the filter or user behavior are caught and corrected early on and will lead to a greater chance of users continuing to use their BSF over the long term. The number of follow-up visits will depend on your organization's capacity. Users should always have the contact information of someone at your organization so they can contact you if there is a problem in-between visits.



When to do visits (suggested):

- 1 week after installation
- 1 month after installation
- 3 to 6 months after installation
- 1 year after installation

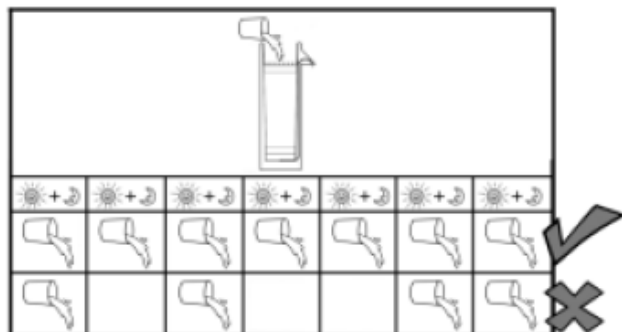
How to do a household visit

- Be polite and friendly
- Take your monitoring forms and make notes during the visit
- Try to talk to the person or people who use the filter the most
- Ask the user how they like the filter
- Ask if they have any questions about using the filter or about the filtered water.



Things to check during a follow-up visit:

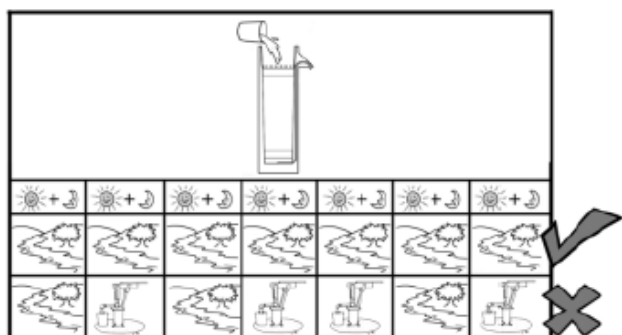
When you visit a user, there are many things to check. Use a monitoring form for follow-up visits. Ask the user questions such as the examples listed below. Record the answers on the form.



1. “How often do you pour water into the filter?”

Users should:

- Pour water into the filter at least once every day
- After the filter stops running, wait at least 1 hour before pouring in more water.



2. “Where do you get the water to pour into the filter?”

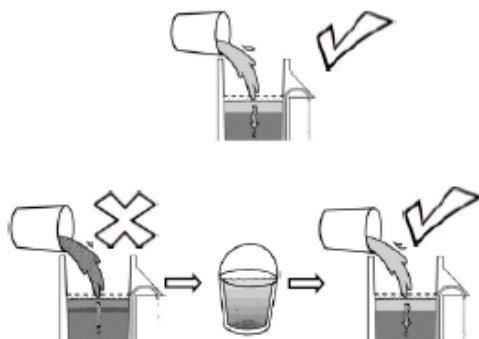
Users should:

- Use the same source of water every day

3. “Can you show me the water you pour into the filter?”

Users should:

- Pour clear water into the filter (or mostly clear)
- If the water is too dirty, let it sit in a bucket until the dirt settles to the bottom. Then pour the clear water into the filter. This will make sure the filter doesn't clog quickly.

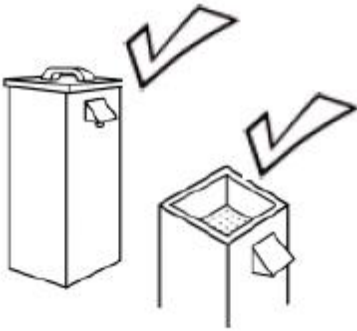


The water poured into the filter should not be too dirty-less than 50 NTU. For a quick test: fill a 2L bottle with the water normally poured into the filter. Put the full bottle on top of the OHorizons logo on the manual or another OHorizons form. Look down through the bottle.

If you can see the logo, the water is okay to pour into the filter.

If you cannot see the logo, the water is too dirty to pour into the filter.





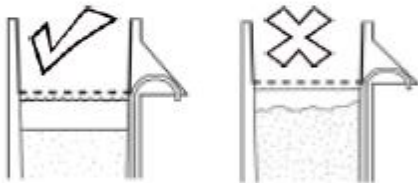
4. “May I take a look in your filter?”

- The lid should be on the filter
- The diffuser should be inside the filter
- The diffuser and lid should be in good condition



5. “Are there any cracks or leaks in the filter?”

- Any leaks should be repaired by your team
- If you must take out the sand and gravel to fix the leak, you will need to reinstall the filter with new sand and gravel
- If the leak cannot be repaired, you may consider replacing the leaking filter with a new filter



6. “May I take out the diffuser to see the sand?”

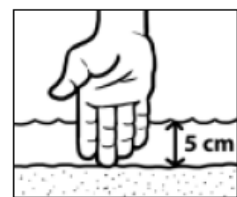
- The surface of the sand should be flat and level
- If there are small holes or dents in the sand, look at the diffuser to see if it has cracks or if it does not fit tightly in the top of the filter
- If there are big holes and valleys in the sand, ask the user if they sometimes pour water into the filter without the diffuser. Remind them to always keep the diffuser in the filter.

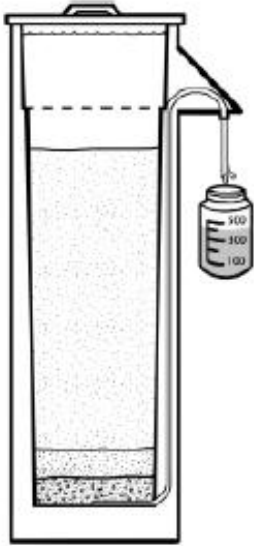
7. “May I check the depth of the water?”

- Check the depth of the water. The standing water above the sand should be about 5cm (2”) deep. The standing water level is okay if it is between 4cm and 6cm (1.5” to 2.5”).



Tip: If you do not have a ruler, put your hand into the water. The water should come up to the 2nd knuckle on your middle finger. This is about 5 cm!
Wash your hands after – the water in the top of the filter is full of pathogens!





8. “Can we fill the filter to check the flow rate?”

- The flow rate should be 340 mL per minute or less
- If you are filling a 1 L bottle, it should take 2 minutes 54 seconds or longer to fill
- If you are using a 500 mL bottle, it should take 1 minute 27 seconds or longer to fill

If the flow rate is very slow, ask the user:

- “Was the flow rate faster when the filter was first installed, or has it always been this slow?”
- “Have you ever done a swirl and dump?”
- Ask them to show you how to do a Swirl and Dump. Show them again if they do not remember. Explain that this will help the flow rate become fast again.

9. “Do you clean the filter? How do you clean it?”

Users should:

- Wash the diffuser and lid in soapy water and keep the outside of the filter clean
- Wipe the outlet tube with a clean cloth and chlorine



10. “Has the flow rate ever become too slow? What did you do?”
(only ask this if you did not ask them before.)

Users should:

- Do a Swirl and Dump on the top of the sand

“Can you show me how to do a Swirl and Dump?”

- Add water, take out the diffuser and swirl their hand around, flat on the sand. Then scoop and dump out the dirty water in the top of the filter.

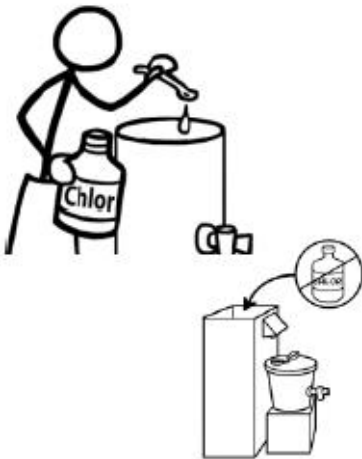




11. "What containers do you use to collect water from the source? Can you show me? Can you also show me what containers you store your filtered water in?"

Users should:

- Use one container to pour dirty water into the filter, and a DIFFERENT container to collect the filtered water at the outlet
- Use a safe storage container to catch the filtered water
- Store drinking water covered with a lid to keep dirt and insects out



12. "Do you do anything to the filtered water before you drink it?"

Users should:

- Disinfect the filtered water, such as by using chlorine, boiling, or SODIS

If the users add chlorine, ask them where they put the chlorine.

Users should:

- Put the chlorine in the safe storage container only. They should NEVER put chlorine in the top of the filter.



13. "Do you clean your water container? How do you clean it?"

Users should:

- Wash the inside of the safe storage container with soap and treated water
- If chlorine is available, they should add chlorine to the water and let it sit for 30 minutes
- Wipe the tap with a clean cloth and chlorine

Fill out the monitoring form for Filter Follow-Up Visits

