

OBJECTIVE

To provide a standard guide to WASH Cluster agencies to be able to conduct Sanitary Surveys of shallow wells and boreholes. This approach was agreed in the WASH Cluster Technical Meeting held in Mogadishu on 22 November 2011. A sanitary survey is a "risk based" approach to assess the risk of contamination of a shallow well, or borehole.

The Guide includes:

1. Background on Sanitary Surveys
2. Sanitary Survey for boreholes and hand dug well with handpump
 - a. Diagram
 - b. Sanitary Survey Form (to complete)
 - c. Recommendations for further action
3. Sanitary survey for open
 - a. Diagram
 - b. Sanitary Survey Form (to complete)
 - c. Recommendations for further action

Background on Sanitary Surveys

What is a sanitary survey?

A sanitary survey is a survey done of the water source and the surrounding environment to assess the likelihood of bacteriological contamination of this water source.

Why do we do sanitary surveys?

A sanitary surveying is a cheap way, requires neither equipment nor highly-skilled staff. Additionally a sanitary survey makes it possible to see what needs to be done to improve and protect a water source.

When a sanitary survey shows that a water source is poor one can assume that the water is contaminated and in most cases it will not be needed to test the water for bacteriological contamination.

Only water sources that show a low or intermediate risk for contamination should be tested for bacteriological contamination to confirm the result.

As water-quality analysis is expensive, and requires equipment and trained staff and will not identify the source of contamination, sanitary surveys are often preferred above a water quality analyses.

Important

A Sanitary survey can determine the most obvious possible sources of contamination, but may not reveal all sources of contamination, for example, remote contamination of groundwater therefore water sources that show a low or intermediate risk for contamination should still be tested for bacteriological contamination to confirm the result of the sanitary survey.

When to do a sanitary survey

A sanitary survey should also be considered when:

- contamination is suspected, to identify the likely cause;
- when there is an epidemic of water borne diseases like cholera, to identify potential sources or risks ;
- to interpret results from water-quality analysis, to establish how the water became contaminated;
- as a routine exercise, to monitor sanitary conditions and to determine how best to improve a water source;

How

A sanitary survey can be done by people who are able to read and write and that had a basic training on the survey. After the survey has been done results should be analysed and at wells that show a high risk of contamination a follow up action will be required. Well users should be made aware of the findings of the survey

Further reading:

WHO guidelines for drinking water quality, volume 3, 1997

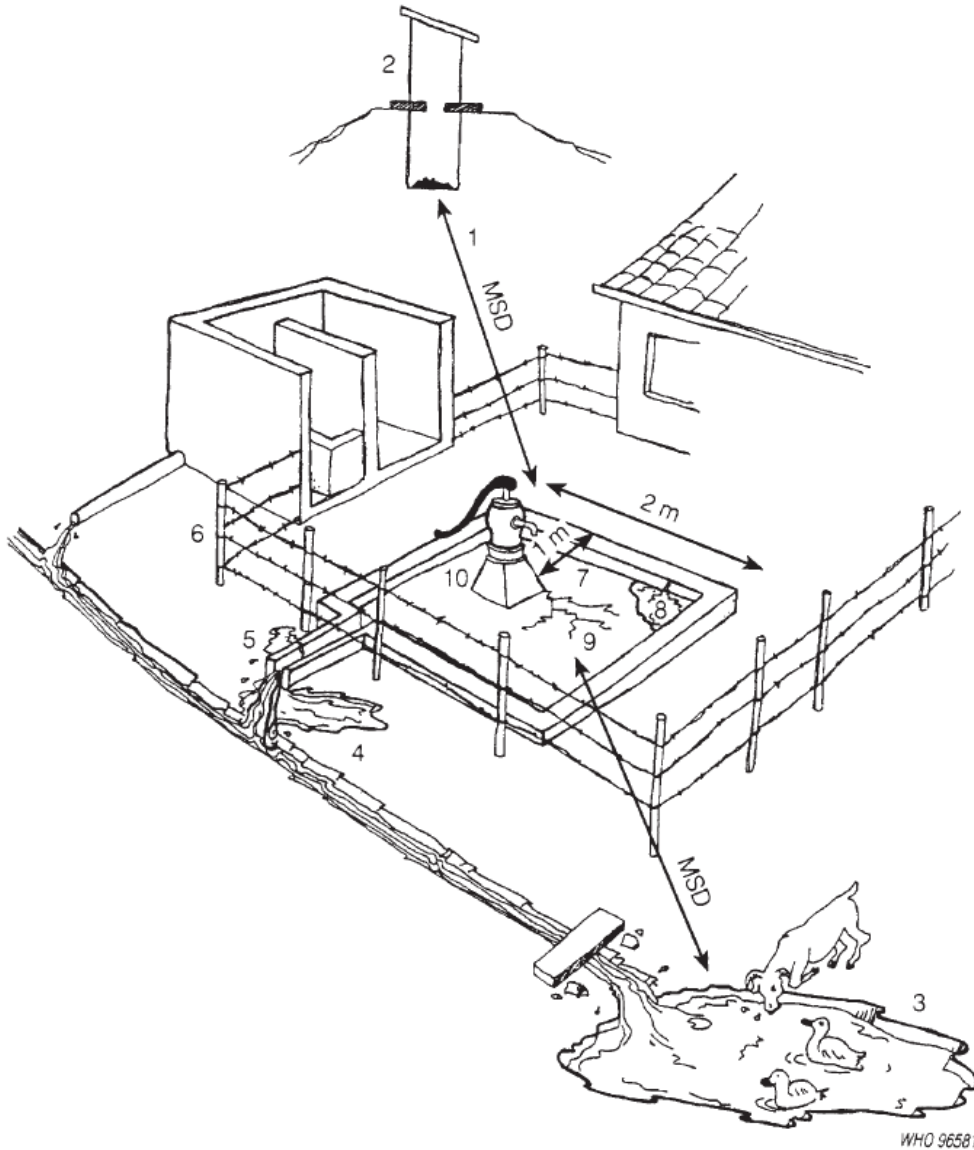
Engineering in emergencies, Jan Davies and Robert Lambert, 2002

Surveillance of Drinking water Quality in rural areas, Lloyd and Helmer, 1991

Sanitary Surveying, WEDC, Micheal Smit and Rob Shaw

1. For Boreholes, and Hand-dug wells with hand-pump

a. Diagram



1. For Boreholes, and Hand-dug wells with hand-pump**b. Template to complete**

General information: Village and street name:
 Number of users:
 GPS coordinates (or P-Code)

Date of visit:

		Yes	No	remarks
1	Is there a latrine within 30 meters of the well			
2	Is the latrine on higher grounds than the well			
3	Is there any other source of pollution within 10 meters			
4	Is there ponding/stagnating water around the well			
5	Is the drainage channel broken/cracked or overflowing within the first 2 meters from the apron?			
6	Is there adequate fencing around the well (preventing animals to come near the well)			
7	Is the apron radius less than 1 meter around the well			
8	Is there ponding/stagnating water at the apron			
9	Are there any cracks in the wells apron			
10	Is the handpump loose at the point of attachment			
11	Is the well likely to be properly sealed (lined) within the first 3 meters below ground level?			
12	If there is a cover on the well is it properly sealed and no water can flow into the well			
13	Is the handpump broken?			
The number of yes scores or total risk score is				

Contamination risk score 6-11 (very) High
 2-5 Medium
 0-2 Low

(note it remains important to critically look at each question of the sanitary survey and examine the real risk of each question eg, if the only identified problem is a crack in the apron and one can see that waste water can directly flow back into the well the contamination risk is still very high even though the survey might indicate a low risk)

The following important points of risk were noted:

1. For Boreholes, and Hand-dug wells with hand-pump**c. Recommendations for further action****• Wells with a high risk score:**

Water of this well is not safe to use for consumption, treatment is required and improvements of the well are needed to protect the well. A bacteriological test is not needed as water is most probably contaminated.

Preferred options to treat the water are

- a) House Hold Water treatment (eg ceramic pot filter, household chlorination)*
- b) chlorination of water vessels at the well site (eg through the chlorine dispenser)*
- c) Daily well chlorination followed up by residual chlorine monitoring.*

• Wells with medium risk score:

Water from this well is possibly not safe for consumption and improvements of the well are needed to protect the well. A bacteriological test can confirm safety.

It is advisable to treat the water, possible ways to treat water are;

- a) House Hold Water treatment (eg ceramic pot filter, household chlorination)*
- b) chlorination of water storage vessels at the well site (eg through the chlorine dispenser or bucket chlorination)*
- c) Daily well chlorination followed up by residual chlorine monitoring.*

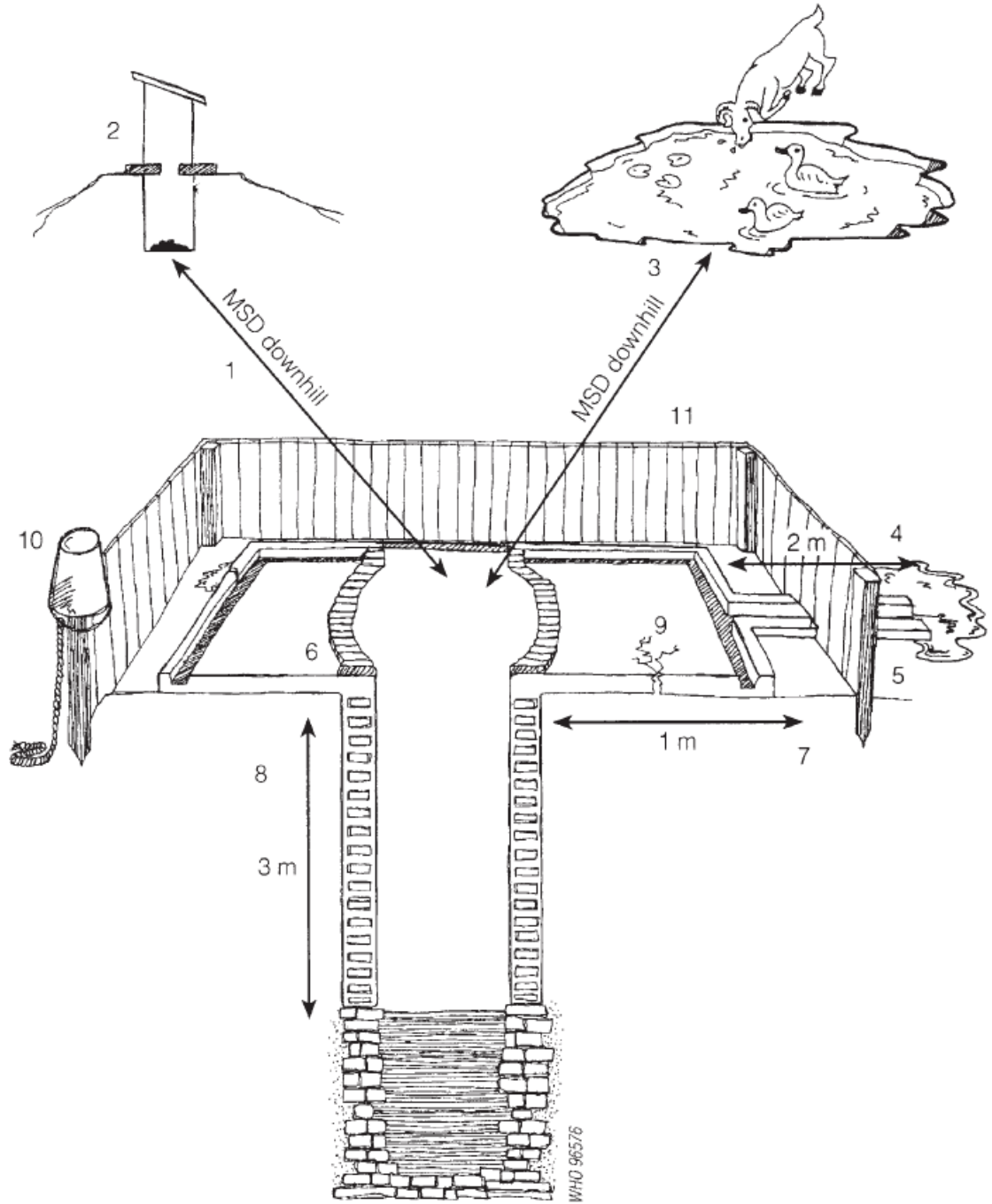
• Wells with a low risk score:

Water of this well is likely to be safe for consumption: a bacteriological test can confirm this.

To ensure a safe water chain it remains advisable to promote House Hold Water Treatment and Safe storage or alternatively chlorination at the well can be considered (eg through the chlorine dispenser)

2. For Open Well

a. Diagram



2. For Open Well**b. Template (to complete)**

General information: Village and street name:
 Number of users:
 GPS coordinates (or P-code)

Date of visit:

		Yes	No	remarks
1	Is there a latrine within 30 meters of the well			
2	Is the latrine on higher grounds than the well			
3	Is there any other source of pollution within 10 meters			
4	Is there ponding/stagnating water around the well			
5	Is the drainage channel broken/cracked or overflowing within the first 2 meters from the apron?			
6	Is there a well wall which will prevent spillage water to flow back into the well			
7	Is the apron radius less than 1 meter around the well			
8	Is the well properly sealed (lined) within the first 3 meters below ground level?			
9	Are there any cracks in the wells apron			
10	Are ropes and bucket possibly contaminated when used (eg been put on the ground)			
11	Is there adequate fencing around the well (preventing animals to come near the well)			
12	Do people use their own rope and bucket when fetching water			
13	Is the well open when not in use			
The number of yes scores or total risk score is				

Contamination risk score 6-11 (very) High
 2-5 Medium
 0-2 Low

(note it remains important to critically look at each question of the sanitary survey and examine the real risk of each question eg, if the only identified problem is a crack in the apron and one can see that waste water can directly flow back into the well the contamination risk is still very high even though the survey might indicate a low risk)

The following important points of risk were noted:

2. For Open Well

c. Recommendations for further action

- **Wells with a high risk score:**

Water of this well is not safe to use for consumption, treatment is required and improvements of the well are needed to protect the well. A bacteriological test is not needed as water is most probably contaminated.

Preferred options to treat the water are

- a) House Hold Water treatment (eg ceramic pot filter, household chlorination)*
- b) chlorination of water vessels at the well site (eg through the chlorine dispenser)*
- c) Daily well chlorination followed up by residual chlorine monitoring.*

- **Wells with medium risk score:**

Water from this well is possibly not safe for consumption and improvements of the well are needed to protect the well. A bacteriological test can confirm safety.

It is advisable to treat the water, possible ways to treat water are;

- a) House Hold Water treatment (eg ceramic pot filter, household chlorination)*
- b) chlorination of water vessels at the well site (eg through the chlorine dispenser)*
- c) Daily well chlorination followed up by residual chlorine monitoring.*

- **Wells with a low risk score:**

Water of this well is likely to be safe for consumption; a bacteriological test can confirm this.

To ensure a safe water chain it remains advisable to promote House Hold Water Treatment and Safe storage or alternatively chlorination at the well can be considered (e.g. through the chlorine dispenser)