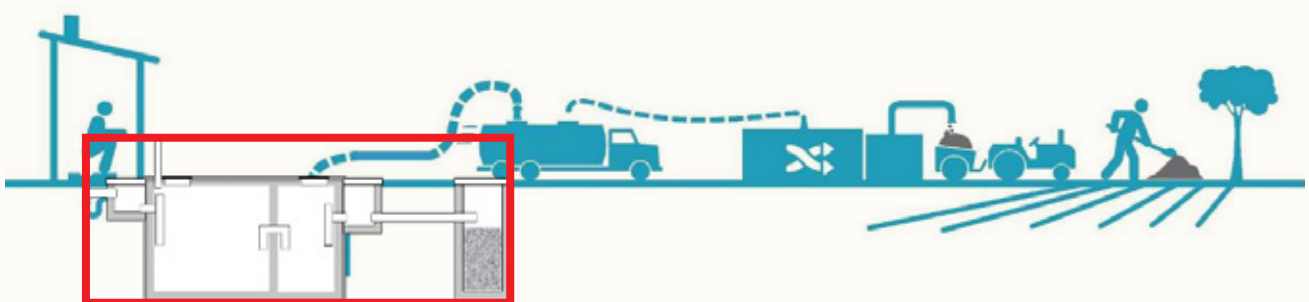


Citywide Inclusive Sanitation Scaling and Sanitation Innovation

Hands on Training on Septic Tank Construction for Masons



Orientation Manual
December 2022

Material and Learning Application: This material is prepared by Environment and Public Health Organization (ENPHO) with the support of 'CWISAN Thematic group' for Training Material Development and is to be used for training purposes only. Training materials (IEC/ cases etc.) used in the package are for the reference to understand the concept and/or to show the practices around the globe and at national level. It is not by any means, intended to judge or evaluate the activities/ the materials. To this, the package development team do not claim for any rights towards such materials but recognizes such properties as of the respective organizations.

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1. Introduction

This orientation manual is intended to facilitate the trainers for the hands-on orientation for septic tank construction. The package is a mixture of theory and practical sessions required for the effective and efficient orientation. Information included in the manual are based on the review from various packages developed by different organizations of different countries along with the practical experience of the Environment and Public Health Organization (ENPHO). It has been developed specifically for the context of Nepal.

1.1 Orientation Overview

In this orientation, participatory approaches are applied to ensure good learning environment and emphasis adult learning style. Participatory style orientation includes open discussion, demonstrations, small group discussion and hands-on practice. Active participant engagement in learning activities is highly encouraged.

1.2 Orientation Objective

The main objective of the orientation is to enhance the knowledge and skill of mason to ensure the proper construction procedure and functioning of septic tank thereby contributing to clean environment.

1.3 Learning Outcomes

The following learning outcomes list what the participants will be able to do by the end of the orientation to demonstrate increased knowledge and improved skills. Each lesson plan refers to the specific learning expectations.

Lesson Plan	Topic	Learning Outcomes: Participants will be able to....
1	Orientation Opening	<ul style="list-style-type: none">• Introduce participants and trainers in participatory method.• Discuss the group's expectations and agenda for the orientation.
2	Introduction to Septic Tank	<ul style="list-style-type: none">• Describe a septic tank as a proper type of containment• Explain all the technicalities of septic tank• Discuss the main reasons for the need of septic tank
3	Hands-on Practice	<ul style="list-style-type: none">• Describe the technicalities of septic tank construction with hands on practice with a life size model
4	Orientation Closing	<ul style="list-style-type: none">• Evaluate whether learning expectations were met• Analyze the orientation and provide feedback on the orientation

1.4 Participants

This orientation is mainly aimed for the masons who have been working in the construction sector.

1.5 Working with Low Literacy and Other Languages

Keep in mind that in any orientation there may be participants who have different levels of ability in reading and writing. There may be participants who do not understand the language of instruction well, even if they said they do. You will need to modify the way you normally train to accommodate their learning needs. Use short sentences, pictures and illustrations, gestures, demonstrations, small group discussions and hands-on practice. These methods will help all participants understand and remember the information better, and are especially important for participants with lower reading, writing or language skills.

1.6 Addressing Barriers to Participation

When setting up an orientation, it is important to consider barriers that may limit certain participants from attending. What can you do to make it easier for them to attend? Factors that you may want to consider are:

- Time of the orientation: Is the orientation being held at a time of day and week that all people can attend? Is there a time that will interfere less with domestic responsibilities or other work obligations? Is it being held at a time of year when harvest, national holidays, celebrations or political events may prevent people from attending?
- Location: Is the location easy and convenient for participants to access?
- Language: Will interpretation and/or translated documents be available for participants who are not fluent in the language in which the orientation will be delivered?

When planning the orientation, anticipate the barriers that may prevent your target audience from attending. Reduce these challenges as much as possible when organizing orientation logistics.

Orientation Preparations

There are several things that you will need to do to get ready for the orientation.

2.1 Logistics Management

The orientation planning team (the trainers and the host) will need to determine orientation logistics such as:

Pre-orientation

- What is the orientation budget?
- Who will invite the participants and communicate with them?
- Who will organize and coordinate food for breaks?
- Who will organize the orientation site and set up?
- Who will purchase and organize the orientation equipment and materials?
- Who is responsible for onsite registration?
- Who is responsible for printing the participant materials?
- Who is responsible for delivering each session in the agenda?

During the orientation

- Who will check that snacks and food are ready at the appropriate times?
- Who will prepare the room in the morning and reorganize in the evening?
- Who will prepare the flipcharts for the day?
- Who is in charge of checking participant list details?
- Who is in charge of preparing evaluations?

Post-orientation

- Who will type up the orientation evaluations?
- Who will clean up the orientation materials and space?
- Who is responsible for replacing materials if needed?
- Who is responsible for reporting?
- Who is responsible for maintaining communication with the participants?

2.2 Trainer Roles and Responsibilities

It is essential that the facilitation team work well together. You should meet with the other trainers before the orientation to discuss the orientation agenda and assign roles and responsibilities. It is also useful to clarify the role of other trainers when they are not actually conducting an orientation session: should they be assisting in the group work, be available to answer questions, or be setting up for the next session? Where possible, ensure that all trainers can be present for the entire orientation.

2.3 Orientation Space

If possible, visit the orientation site before the participants are due to arrive, and set up your materials. Seating arrangements have a big influence on the orientation. It is recommended to arrange the tables and chairs so that participants can make eye contact with one another and can break into small groups easily.

3. Orientation Framework

The general framework of the orientation is as follows:

- Orientation opening and introductions: To welcome people and allow participants and trainers to get to know each another.
- Individual sessions: To focus on a selected topic; each individual session includes an introduction, a main lesson and a closing activity to review the content.
- Breaks and lunch: To keep people motivated, focused and energetic; plan for a mid-morning and mid-afternoon break that allows people to use the washroom, take a drink or eat a snack. While planning the orientation, it is also important to clarify in advance as to whether food and snack will be provided during the orientation.
- Review at the end of the day: To gain feedback from the participants and to clarify any doubts.
- Orientation closing: The end of the orientation can be official or unofficial depending on what is appropriate. Certificates are typically handed out.
- End of orientation evaluation: To allow participants to assess the strengths and weaknesses of the orientation for further improvements.
- Local hosts' and trainers debrief: To discuss what went well, what aspects of the orientation can be improved and what needs to be done in the future. Debriefs are usually held at the end of each day and at the end of the orientation.

A generic version is provided to give a starting point for the creation of an agenda specific to the orientation.

3.1 Lesson Plans for Individual Sessions

The following lesson plans are written for trainers and provide suggested activities and learning aids for each session. As long as the learning expectations are achieved, please feel free to adapt the lesson plans to match your individual style and the needs of the particular audience.

Each lesson plan is structured and formatted with the following components:



Learning outcomes: Describes what the participants will be able to do by the end of the lesson to demonstrate increased knowledge, improved skills or changes in attitude. Each lesson plan should reference the overall learning outcomes listed.



Time: The clock symbol appears next to the amount of time the session may take. This is an estimate, and the session may be longer or shorter depending on how you facilitate it.



Materials: Lists all the materials that will be required for the lesson.



Preparation: The clipboard appears when there is preparation that needs to be done before the session. Scan the lesson plan for any preparation symbols before facilitating the session.



Introduction: The hook appears at the start of the session to engage the participants in the new topic.



Activity: The puzzle indicates that there is an activity for the participants. Often materials need to be prepared in advance of the activity.



Handouts: The papers indicate that there are handouts to be given to the participants.



Key points: The key appears where there are important points and topics to discuss. These are reminders of what key points the participants should understand by the end of the lesson.



Review: The question mark appears when you are checking for learning and understanding. What have the participants retained? What do they think?



Trainer notes: The exclamation point appears to warn you of things to consider during the lesson.

Daily Agenda

Time	Topics
11:00 – 11:30	Orientation Opening
11:30 – 1:00	Introduction to Septic Tank
1:00 – 2:00	Break
2:00 – 3:30	Hands-on Practice
3:30 – 4:00	Orientation Closing

Lesson Plan 1

Orientation Opening



30 minutes

Learning Outcomes



At the end of this session participants will be able to:

1. Introduce participants and trainers in participatory method.
2. Discuss the group's expectations and agenda for the orientation.

Materials



- Markers
- Newsprint paper
- Pens (1 per person)
- Notebooks or paper (1 per person)
- Introduction PowerPoint

Preparation



- Write the agenda for the day on the flip chart paper
- Write the heading "Group Learning Expectations" on flip chart paper
- Prepare the flipchart paper with "Group Agreements"
- Put a notebook, name tag and pen at each seat (1 per person)



In some cases, a formal welcoming ceremony will start the orientation. Consult with your host beforehand to determine the protocol and the amount of time required. You may need to adjust your agenda accordingly.



3 minutes

Introduction



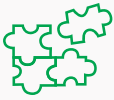
1. Introduce trainers, orientation hosts and other guests as appropriate and welcome participants.
2. Introduce the orientation and present the objectives of the orientation.
 - a. This orientation is for the masons for the proper construction of the standard septic tank.
 - b. This orientation is participatory. There are different types of group activities in various sessions.
3. With the information, share the objectives of the orientation to participants.

4. Present the schedule for the day with participants.
5. Explain the building/orientation layout, bathroom location, emergency exits, first aid, and daily schedule.
6. Lead an introduction/icebreaker activity to help participants meet each other and introduce themselves to the group as follow.



20 minutes

Option A Self-Introduction



Ask participants to introduce themselves with following information:

- a. Their name,
- b. Their experience (in year) in the profession
- c. One most interesting fact about this profession



5 minutes

Option B Introduction by Trainer



Inform participants about the participants by the trainer himself/ herself. If required, read out the list of participants name as a brief introduction.

1. Ask participants to raise their hands as per the number of years that they have been in the profession.
 - a. 0 – 2 years
 - b. 2 – 5 years
 - c. 5+ years
2. Note the number of participants on a brown sheet/ newsprint paper.



2 minutes

Learning Expectations



1. Explain participants that they are now going to collect the expectations from the orientation.
2. Ask participants, what they expect to learn from the orientation
3. Collect responses from 2 to 3 participants and write it down in a brown sheet or a white board.
4. Inform participants that they will be discussing the expectations at the end of orientation.
5. Inform participants about the scope of orientation and inform if any of the expectations are out of scope of the orientation.



5 minutes

Orientation Format and Agenda



1. Review daily agenda with break and lunch times.
2. Ask the participants if they have any questions at this point.

Reflections on Lesson

Lesson Plan 1: Orientation Opening Presentation Slides

नगर व्यापी समावेशी सरसफाइमा स्तरोन्नती तथा नवीनता




अभिमुखिकरण परिचय

स्थानीय टुकमीहरूको लागि
सेप्टिक ट्यांकीबारे जानकारी सम्बन्धि अभिमुखिकरण

श्रोत व्यक्ति

ITN-BUET ENPWO BIL & MELINDA GATEL

तालिम संरचना



ITN-BUET ENPWO BIL & MELINDA GATEL

भवनको नक्सा


- शौचानघको स्थान
- जापतकालीन निकास
- प्राथमिक उपाचार



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परिचय

- नाम
- यस पेशामा तपाईंको अनुभव
- यो पेशाबारे एउटा रोचक तथ्य



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तालिम परिचय

उद्देश्य


- सेप्टिक ट्यांकीको विषयमा टुकमीहरूको ज्ञान तथा क्षमता अभिवृद्धि गर्ने
- सफा वातावरणको लागि सेप्टिक ट्यांकीको उचित निर्माण र रूढि तरिकाले कार्य गरिरहेको यकिन गर्ने



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दिनको तालिका

- तालिम परिचय
- सेप्टिक ट्यांकी को परिचय
- अभ्यास
- तालिम समापन



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सहभागीको परिचय

- Ask participants to introduce themselves
 - Name
 - Experience in this occupation
 - Interesting fact about this occupation
- Ask participants to introduce one by one

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परिचय

- नाम
- यस पेशामा तपाईंको अनुभव
 - > 0 - २ वर्ष
 - > २ - ५ वर्ष
 - > ५+ वर्ष



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सिकाइका अपेक्षाहरु



स्व: मूल्यांकन



तालिम ढाँचा र तालिका

- अनुभव गर्दै सिक्ने
- एकेरी वा सामूहिक क्रियाकलापहरु
- घटना अध्ययन तथा प्ररुको अनुभवहरुबाट सिकाइ
- छलफल, प्रश्न र उत्तर
- समुदाय वा समूह बिच संयन्त्र विकास गर्ने

तालिम ढाँचा र तालिका

समय	विषयवस्तु
११:०० - ११:३०	अभिमुखिकरणको परिचय
११:३० - १:००	सेप्टिक ट्याङ्किको परिचय
१:०० - २:००	साजा समय
२:०० - ३:३०	अभ्यास
३:३० - ४:००	अभिमुखिकरणको समापन

धन्यवाद

संस्थापक र जलस्थायी संस्था (एनपी):

११०/१५ आदर्श मार्ग, नयाँ बानेश्वर, काठमाडौँ

फोन : ९७७-१-४२४४६४६, ४२४४७५६, ४२४४९९२, ४२४४६०९

फ्याक्स : ९७७-१-४२४४६०९

इमेल : enpho@enpho.org

वेब साइट : www.enpho.org

यस तालिम संयोजक र अनुसन्धानकर्ता संस्थापक र जलस्थायी संस्था (एनपी) नै संयोजकरी समितिको समन्वय अन्तर्गत 'सुस्थायी' संस्था (CSWAN) अन्तर्गत स्थापित विद्यालय तालिमको संयोजक 'सुस्थायी समितिको समन्वय अन्तर्गत तथा संयोजक' संस्था संयोजकको रूपमा तालिमको संयोजकको रूपमा कार्य गर्नुको साथै यस तालिमको आयोजना गर्न सकिने छ। यस तालिमको आयोजना गर्न सकिने छ। यस तालिमको आयोजना गर्न सकिने छ। यस तालिमको आयोजना गर्न सकिने छ।

Lesson Plan 2

Introduction to Septic Tank



1 Hr 30 minutes

Learning Outcomes



At the end of this session participants will be able to:

1. Describe a septic tank as a proper type of containment
2. Explain all the technicalities of septic tank
3. Discuss the main reasons for the need of septic tank

Materials



- Information sheets on septic tank
- Presentation slide deck on septic tank

Preparation



- Cue the presentation slide deck on septic tank
- Go through the slide notes of the presentation slides
- Print and prepare the information sheets (IECs) on septic tank for each participant

Introduction



5 minutes



1. Ask participants if they can relate their profession of construction to sanitation sector. If yes, how?
2. Collect responses from participants.
3. Inform participants, that while working in the profession of construction, they are related to or they contribute to the sanitation sector by constructing toilet and drainage-for transportation of the wastewater, by constructing septic tank for the collection and partial treatment of the faecal sludge and construction of FSTPs and wastewater treatment plants for the treatment of the faecal sludge and wastewater.
4. Inform participants that by supporting to construct such facilities, they are supporting to control and mitigate the impact of prevention of infection and spreading the diseases.
5. Further inform participants that for the same one need to be aware on the proper construction of such facilities and through this orientation they will be getting more information on the proper construction of septic tank, one of the infrastructures for the prevention of disease and infection.
6. Present learning outcome of the session.



35 minutes

Sanitation Service Chain and Septic Tank



1. Present the slide of sanitation service chain (SSC) and discuss that the chain is for the proper management of faecal sludge or sanitation.
2. Further inform that they will be focusing on the containment of the SSC, especially focusing on construction of a proper/ standard septic tank.
3. Present slide on types of containment and inform briefly on each type of containment.
 - a. Pit latrine: a type of toilet that collects human feces in a hole in the ground. Urine and feces enter the pit through a drop hole in the floor, which might be connected to a toilet seat or squatting pan for user comfort.
 - b. Septic tank: an underground chamber usually made of concrete through which domestic wastewater flows for basic sewage treatment. Settling and anaerobic digestion processes reduce solids and organics, but the treatment efficiency is only moderate.
 - c. Biogas digester: A biogas digester uses natural anaerobic decomposition of organic matter under controlled conditions. The digester is usually a large, sealed container for the organic matter ex. manure from livestock or poultry, green waste from agriculture, sewage or food waste
 - d. Eco-San: Eco-San toilet is a closed system, an environment friendly sanitation technology, which acknowledges human urine and faeces as valuable resources for agricultural sustainability
4. With next slide, inform participants that among the mentioned types of containment, these are the proper types of containment. Further, inform that amongst these, participants will be discussing in detail on the septic tank.
5. With next slide, ask participants what they understand by septic tank.
6. Collect responses and with their responses, present the video on 'standard septic tank'.
7. Clear the idea of septic tank from the video with the slide on 'what is septic tank?' and discuss as appropriate.
8. With following slide, inform participants that all rectangular tank are not septic tank and present the difference.
9. With next slide, inform participants on the parts of a septic tank.
10. Now with next slide, ask participants 'what do they understand by soak pit?' and collect 1 to 2 responses.
11. After the responses from participants, present the slide of soak pit and discuss as appropriate.
12. Now with next slide, inform participants how does a septic tank function.
13. Continuing the information on how does a septic tank function, present two videos on importance of proper inlet and outlet and summarize the idea with next slide.
14. Present the slide on features of septic tank and minimum measurement that should be in a proper/ standard septic tank.
15. With this, present the blueprint/ trace maps of septic tank and discuss appropriately.
 - a. Drawing of septic tank from top look
 - b. Drawing of septic tank from lengthwise look
 - c. Drawing of septic tank from breadthwise view
16. Along with the drawing of the septic tank, present the slide with points to consider while making a soak pit and discuss the points in detail.
17. Ask participants if they have any concerns so far and discuss as needed.



25 minutes

How big should a septic tank be?



1. Paste a flip chart paper with the question, 'How big should a septic tank be?' along with following options.
 - a. As big as possible
 - b. As small as possible
 - c. As per the requirement of number of users
2. Ask participants to raise their hand who think that the septic tank should be as big as possible and note the number of hands raised at the side of option A.
3. Similarly, repeat the process for option B and C.
4. Present the slide on the measurement or size of septic tank as per the number of users and temperature and discuss.



Trainer's Note: Trainer may use the slide of Himalayan, Hilly or Terai region as per the need while presenting the idea on size of the septic tank.

5. Ask participants to reflect on their experience and think about the size that they have constructed so far.
6. Ask participants, were they of appropriate size or not and why.
7. Further ask question on which one is economical, wider or deeper septic tank.
8. Collect participants response and inform the right answer with next slide and further discuss.
9. With this, inform participants that one of the main components of proper/ standard septic tank is soak pit, hence will be discussing on it.



15 minutes

Why standard septic tank?



1. Inform participants that they must have been constructing septic tank while constructing the house. Ask why they need to discuss about the septic tank.
2. Collect few responses and with their responses, present slide on the 5 reasons for the proper/ standard septic tank.
3. Further present the following slides with the description of each of the 5 main reasons.
4. To this, present the slide on 'how far should a septic tank be as it is one of the major concerns for the prevention of infections or spreading the disease.
5. Ask participants how one can build a proper/ standard septic tank.
6. Present next slide with the construction material required for the construction of a septic tank.
7. Further, present that there are some of the ready to install septic tank and present the slide on same.
8. Inform participants that for the further information on standard septic tank, there are other information materials and hand out the materials to each participant.



10 minutes

Review



1. Ask participants to share one interesting or new fact they learnt about septic tank in the session.
2. Collect 4 to 5 responses from participants and discuss further if needed.

Reflections on Lesson

Lesson Plan 2: Introduction to Septic tank Presentation Slides

नगरव्यापी बमबेशी सरसफाइमा स्तरोन्नती तथा नवीनता



सेप्टिक ट्याकीको परिचय


स्थानीय इकमीहरूको लागि
सेप्टिक ट्याकीबारे जानकारी सम्बन्धि अभिमूखिकरण

श्रोत व्यक्ति

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सुरुवात

- तपाईंहरूको सरसफाइसंग केहि सम्बन्ध छ वा छैन ?
- यदि छ भने, के सम्बन्ध छ ?



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तासिम संरचना



ITN-BUET ENPNO BIL & MELINDA GATES

चिकाइका उपलब्धिहरू

- सेप्टिक ट्याकी एक उचित नण्डारण हो भनि व्याख्या गर्ने
- सेप्टिक ट्याकीको सवे प्राकृतिक सवे व्याख्या गर्ने
- सेप्टिक ट्याकी आचरयकताको मुख करयहन छलफल गर्ने

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विषयवस्तु

- सरसफाइ सेवा श्रृंखला र यसका भागहरू
- कन्टेन्टेन्टका प्रकारहरू
- सेप्टिक ट्याकी र यसका भागहरू
- सेप्टिक ट्याकी र यसको साइड
- सेप्टिक ट्याकीमा सरकारी प्रावधान
- सेप्टिक ट्याकी निर्माण

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सरसफाइ सेवा श्रृंखला र यसका भागहरू




सकलन भण्डारण रित्याउने र बुबानी प्रशीधन पुन-प्रयोग / सुरक्षित विसर्जन

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कन्टेन्टेन्टका प्रकारहरू

- खान्दो
 - साधारण खान्दो
 - गारे सल्लको साधारण खान्दो
 - सुधरिएको खान्दो
 - अफ्लेट खान्दो
 - जूम्यास खान्दो
 - सकलन ट्याकी
- सेप्टिक ट्याकी
- पायोम्यास डाइजेष्टर
- इकोमान खान्दो



ITN-BUET ENPNO BIL & MELINDA GATES

उचित प्रकारको कन्टेन्टेन्ट

- जूम्यास खान्दो
- सेप्टिक ट्याकी
- पायोम्यास डाइजेष्टर
- इकोमान खान्दो



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What is septic tank? सेप्टिक ट्यांकी भनेको के हो ?

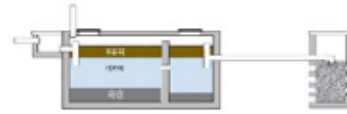
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सेप्टिक ट्यांकी के हो ?

फोहरपानी, विशेषगरी चर्पीबाट निस्कने फोहरपानी लाई केहि अबधीको लागि जम्मा गर्ने र बैबिक प्रक्रिया मार्फत् फोहरपानीको आंशिक प्रशोधन समेत गर्ने एक प्रकारको ट्यांकीलाई सेप्टिक ट्यांकी भनिन्छ । यो सामान्यतया आयताकार हुन्छ ।



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सेप्टिक ट्यांकी के हो ?

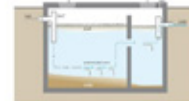
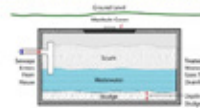


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सबै आयताकार ट्यांकी सेप्टिक ट्यांकी हुदैन ?



- फोहरपानी संचय मात्र गर्दछ ।
- आउटलेट र सोकपिट हुदैन ।
- चल्तिने प्रकारको हुन्छ ।
- एक खान्डे हुन्छ ।
- छिटोछिटो रिल्याउने पर्ने हुन्छ ।

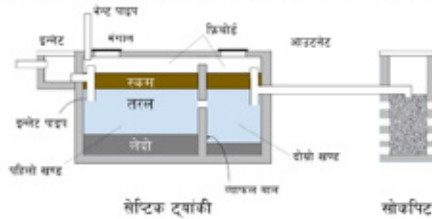
- फोहरपानीलाई संचय संगै प्रशोधन पनि गर्दछ ।
- आउटलेट र सोकपिट हुन्छ ।
- कम्तिमा पनि दुई खान्डे हुन्छ ।
- बटरमिल हुन्छ ।
- निश्चित अवधिमा रिल्याउने पर्दछ ।

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सेप्टिक ट्यांकी भागहरु



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What does mean by the Soak Pit ? सोकपिट भनेको के हो ?

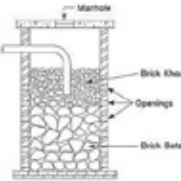
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सोकपिट भनेको के हो ?

- सोकपिट जमिनमा पानी सोस्नदिनको लागि बनाइएको एक प्रकारको खान्डी हो ।
- ईटाको टुक्राले भरिएको हुन्छ ।
- सामान्यतया गोलाकार हुन्छ ।
- ईटाको टुक्राले सम्पर्क सतहको क्षेत्रफललाई बढाउँछ ।
- ताकि यहीभन्दा बढी सुशुभ्रजीवाणु बस्न सकोस् ।
- पानीको प्रदूषणको मात्रालाई जमीनमनि जानुभन्दा अघि प्रशोधन गर्दछ ।

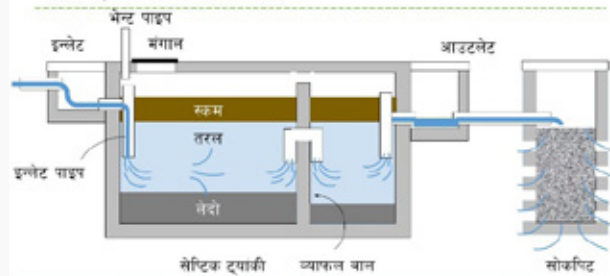


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सेप्टिक ट्यांकीले कसरी काम गर्दछ ।

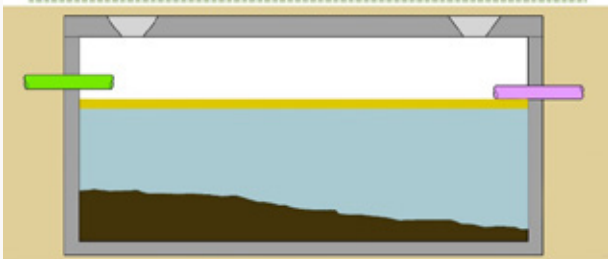


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उचित प्रकारको इन्लेटको काम र महत्व

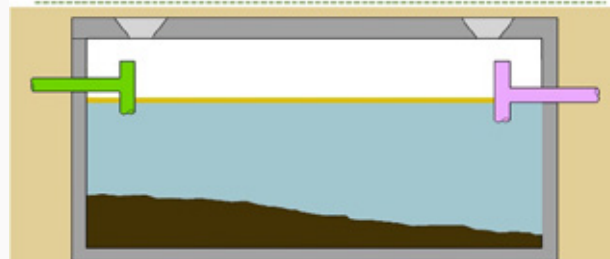


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उचित प्रकारको आउटलेटको काम र महत्व

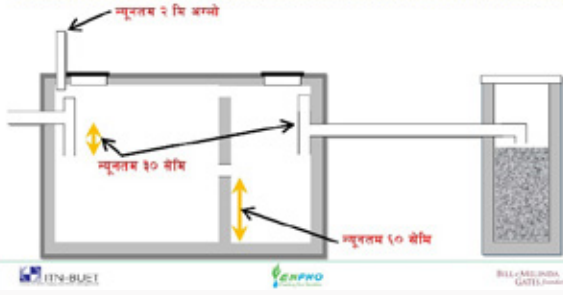


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उचित प्रकारको आउटलेटको काम र महत्व



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सेप्टिक ट्यांकीमा हुनुमा पर्ने न्यूनतम गुणहरू

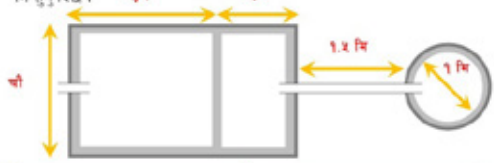
- सेप्टिक ट्यांकी २ खण्डे हुनुपर्दछ ।
- सेप्टिक ट्यांकी नछिर्ने वा नरसाउने हुनुपर्दछ ।
- सेप्टिक ट्यांकीको सावना सोकपिट हुनुपर्दछ ।



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सेप्टिक ट्यांकीमा हुनुपर्ने माप

- सेप्टिक ट्यांकीको लम्बाइ चौडाइ भन्दा २ देखि ४ गुणा हुनुपर्दछ ।
- सेप्टिक ट्यांकीको पहिलो खण्डको लम्बाइ २ मिटर र दोस्रो खण्ड १ मिटर हुनुपर्दछ ।
- सोकपिटको व्यास न्यूनतम १ मि र सेप्टिक ट्यांकी र सोकपिट बीचको दूरी न्यूनतम १.५ मि हुनुपर्दछ ।

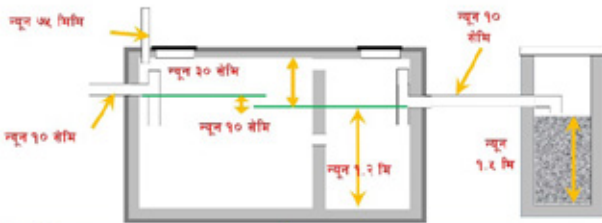


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- सेप्टिक ट्यांकीको आउटलेट सम्मको भित्री उचाइ न्यूनतम १.२ हुनुपर्दछ ।
- आउटलेट इन्लेटभन्दा एक पाइप वा न्यूनतम १० सेमि तल हुनुपर्दछ ।
- इन्लेट, आउटलेट र व्याफल बालको प्यान कमिमा १० सेमि व्यासको हुनुपर्दछ ।
- फ्रिबोर्ड वा आउटलेट र स्लाब बीचको उचाइ न्यूनतम ३० सेमि हुनुपर्दछ ।
- सोकपिटको गहिराइ अधिकतम न्यूनतम १.५-२.५ मिटर हुनुपर्दछ ।

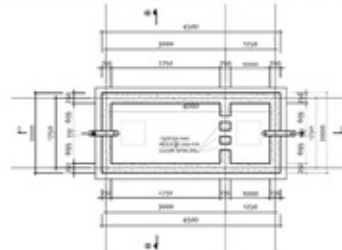
ITN-BUET ENPNO BILL & MELINDA GATES

सेप्टिक ट्यांकीमा हुनुपर्ने माप



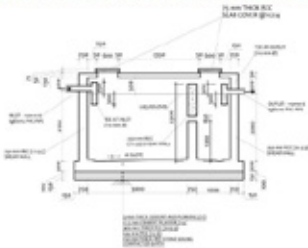
ITN-BUET ENPNO BILL & MELINDA GATES

सेप्टिक ट्यांकीको नक्सा



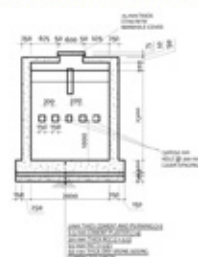
ITN-BUET ENPNO BILL & MELINDA GATES

सेप्टिक ट्यांकीको नक्सा



ITN-BUET ENPNO BILL & MELINDA GATES

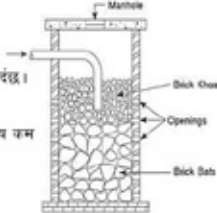
सेप्टिक ट्यांकीको नक्सा



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सोकपिट बनाउँदा ध्यान दिनुपर्ने कुरा

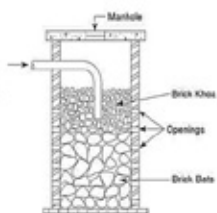
- सोकपिट पानीको श्रोत भन्दा टाढा हुनुपर्दछ ।
- जमीनको बनेट सजिलै पानी सोस्न सक्ने खावको हुनुपर्दछ ।
- सोकपिटमा आउने पानीमा अमिलोचणको मात्रा बधासक्य कम हुनुपर्दछ ।



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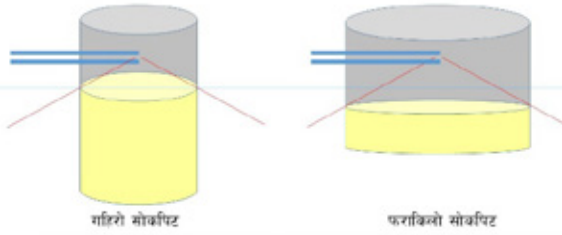
सोकपिट बनाउँदा ध्यान दिनुपर्ने कुरा

- पानी नसोस्ने, भूमिगत पानीको सतह उच्च भएको र बाढीग्रस्त क्षेत्रको लागि खो उपयुक्त हुँदैन ।
- सोकपिटमा आउने पानीलाई सोकेपिटको बीच भागमा पर्ने गरी छँड्नु पर्दछ र
- पाइपको मुखमा छिद्र बनाएर फोहरा जम्ने गरी पानी छँड्नु पर्दछ ।



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सोकपिट धेरै चौडा नगर्ने



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सेप्टिक ट्यांकी कति ठूलो हुनुपर्दछ ?

- जति सक्दो त्यति ठूलो
- जति सक्दो सानो
- प्रयोगकर्ताको सङ्ख्या अनुसार



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प्रयोगकर्ताको संख्याअनुसार सेप्टिक ट्यांकीको साइज ।

Mountain Region	Number of users									
No. of users	5	10	15	20	25	30	35	40	45	50
Length of the 1st Compartment(L1) m	1.0	1.3	1.6	1.8	2.0	2.4	2.8	3.1	3.4	3.8
Length of the 2nd Compartment(L2) m	0.5	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Total Length (L=L1+L2)	1.5	2.0	2.4	2.7	3.0	3.5	4.0	4.4	4.8	5.3
Breadth(b) in m	0.7	1.0	1.2	1.4	1.5	1.8	2.0	2.2	2.4	2.7
Height (H) in m	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Total Volume m ³	1.60	3.00	4.30	5.70	6.80	11.70	15.50	22.80	31.60	45.60

शर्तहरू : पानीको प्रयोग १०० लि प्रतिव्यक्ति प्रतिदिन, रित्याउनु पर्ने अवधि २ वर्ष, जनघनत्व अवधि २४ घण्टा, अधिकतम फोहरपानी उत्पादन हुने समयावधि दैनिक १२ घण्टा

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प्रयोगकर्ताको संख्याअनुसार सेप्टिक ट्यांकीको साइज ।

Terai Region	Number of users							
No. of users	5	10	15	20	25	30	35	40
Length of the 1st Compartment (L1)	0.9	1.3	1.5	1.7	1.8	2.3	2.9	2.8
Length of the 2nd Compartment(L2)	0.5	0.7	0.8	0.9	0.9	1.2	1.4	1.4
Total Length (L=L1+L2)	1.4	2.0	2.3	2.6	2.7	3.5	4.3	4.2
Breadth(b) in m	0.7	1.0	1.2	1.3	1.4	1.8	2.1	2.1
Height (H) in m	1.3	1.3	1.3	1.4	1.5	1.5	1.5	2.0
Total Volume m ³	1.30	2.60	3.60	4.75	5.70	9.45	13.40	17.60

गहिरो र चौडा बीचको सम्बन्ध



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How big should a Septic tank be? सेप्टिक ट्यांकी कति ठूलो हुनुपर्दछ ?

प्रयोगकर्ताको संख्याअनुसार सेप्टिक ट्यांकीको साइज ।

Flatland Region	Number of users									
No. of users	5	10	15	20	25	30	35	40	45	50
Length of the 1st Compartment (L1)	1.4	2	2.3	2.64	2.84	3.6	4.44	4.56	5.4	6.2
Length of the 2nd Compartment(L2)	0.7	1	1.15	1.32	1.42	1.8	2.22	2.18	2.7	3.1
Total Length (L=L1+L2)	2.1	3	3.45	3.96	4.26	5.4	6.66	6.74	8.1	9.3
Breadth(b) in m	1.4	1.4	1.4	1.4	1.4	1.8	1.8	1.8	2	2
Height (H) in m	1.4	1.4	1.4	1.4	1.4	1.8	1.8	1.8	2	2
Total Volume m ³	4.18	12.6	17.2	20.7	22.7	43.2	52.8	52.6	72.6	83.4

शर्तहरू : पानीको प्रयोग १०० लि प्रतिव्यक्ति प्रतिदिन, रित्याउनु पर्ने अवधि २ वर्ष, जनघनत्व अवधि २४ घण्टा, अधिकतम फोहरपानी उत्पादन हुने समयावधि दैनिक १२ घण्टा

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प्रयोगकर्ताको संख्याअनुसार सेप्टिक ट्यांकीको साइज ।

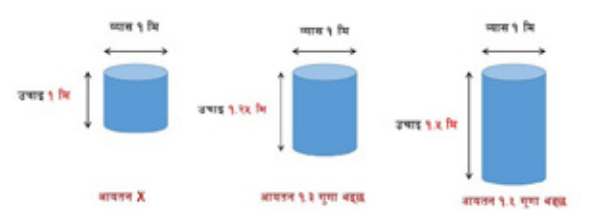
Hilly Region	Number of users									
No. of users	5	10	15	20	25	30	35	40	45	50
Length of the 1st Compartment (L1)	0.9	1.3	1.5	1.8	1.9	2.4	3.0	3.6	4.1	4.7
Length of the 2nd Compartment(L2)	0.5	0.7	0.8	0.9	0.9	1.2	1.5	1.8	2.1	2.3
Total Length (L=L1+L2)	1.4	2.0	2.3	2.7	2.8	3.6	4.5	5.4	6.2	7.0
Breadth(b) in m	0.7	1.0	1.2	1.3	1.4	1.8	2.2	2.7	3.1	3.5
Height (H) in m	1.4	1.4	1.4	1.4	1.5	1.5	2.0	2.0	2.0	2.0
Total Volume m ³	1.40	2.80	3.90	4.90	5.90	9.70	14.90	19.40	25.20	34.00

शर्तहरू : पानीको प्रयोग १०० लि प्रतिव्यक्ति प्रतिदिन, रित्याउनु पर्ने अवधि २ वर्ष, जनघनत्व अवधि २४ घण्टा, अधिकतम फोहरपानी उत्पादन हुने समयावधि दैनिक १२ घण्टा

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Wider or Deeper, Which one is Economical ? गहिरो वा फराकिलो, कुन किफायती ?

गहिरो र चौडा बीचको सम्बन्ध



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Why Proper Septic Tank ? स्तरीय सेप्टिक नै ट्यांकी किन ?

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सरकारी प्रावधानमा सेप्टिक ट्यांकी



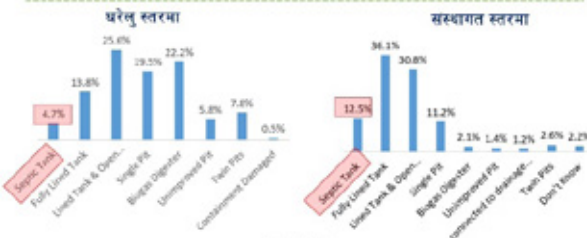
सेप्टिक ट्यांकी अनिवार्य

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दिसापिसाब सकलन र भण्डारण ट्यांकीको अवस्था



काठमाडौं बाहिरको अवस्था

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भूमिगत पानी प्रदूषण



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सेप्टिक कन्निमा कति टाढा हुनुपर्दछ ?

- सेप्टिक ट्यांकीको सोकपिटदेखि पानीको स्रोतसम्मको दुरी
- स्थानीय भाटोको बग्नेट (पांगो, चिम्याइलो, पनीटे, हुगेनी)
- भूमिगत पानीको सतहको उचाइ
- टाढो वा तेस्रो दुरी
- पानीको बहावको दिशा

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सेप्टिक ट्यांकीबारे खर्चा गर्नुपर्नाका २ कारणहरू

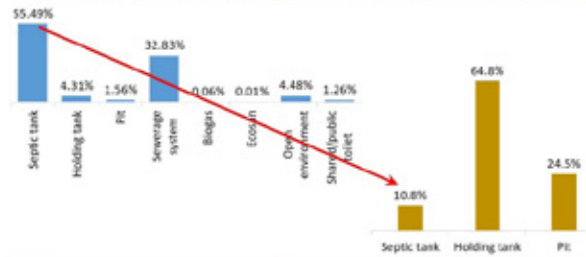
- सरकारी प्रावधान
- सेप्टिक ट्यांकीबारे गलत आम बुझाइ ।
- विद्यमान भण्डारण ट्यांकीको साइज
- जनतामा अनावश्यक अधिक भार
- भूमिगत पानी प्रदूषण

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सेप्टिक ट्यांकीप्रतिको आम बुझाइ



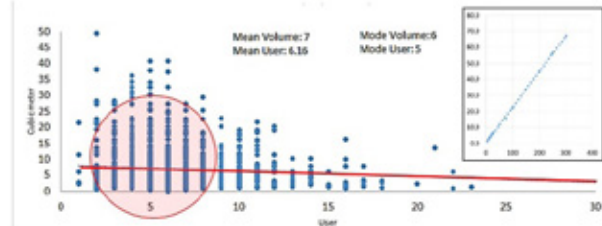
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भण्डारण ट्यांकीको साइज र प्रयोगकर्ता बीचको सम्बन्ध ?

१० जनाको लागि आवश्यक सेप्टिक ट्यांकीको अधिकतम साइज ३ घनमिटर



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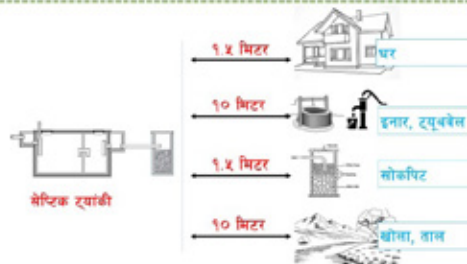
How far should a Septic Tank be ? स्तरीय सेप्टिक कति टाढा हुनुपर्दछ ?

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सेप्टिक कन्निमा कति टाढा हुनुपर्दछ ?



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How can build it ?
स्तरीय सेप्टिक ट्यांकी कसरी बनाउन सकिन्छ ।

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सेप्टिक ट्यांकी केसे निर्माण गर्न सकिन्छ ?



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तैयारी सेप्टिक ट्यांकी



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सेप्टिक ट्यांकी सम्बन्धी जानकारी मूलक सामग्री ?



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सन्दर्भ सामग्री

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धन्यवाद

यज्ञाचार्य र जनसंस्कार संस्था (एनपी)
११०/१२, काठमाडौं बार्ड, नयाँ बानेश्वर, काठमाडौं
फोन : ९७७-१-४२४४४४४, ४२४४४४४, ४२४४४४४, ४२४४४४४
फ्याक्स : ९७७-१-४२४४४४४
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Lesson Plan 3

Hands on Practice



1 hr 30 minutes

Learning Outcomes



At the end of this session participants will be able to:

1. Describe the technicalities of septic tank construction with hands on practice with a life size model

Materials



- Pieces for assembling septic tank
- Pipes and fittings of septic tank

Preparation



- Prepare all the materials for the hands-on practice
 - Pieces of life size model of septic tank
 - Pipes and fittings

Introduction



5 minutes



1. Ask participants to share their experience of their initial days in the profession, how was it, how was their work, how long it took them to get perfection at what they do.
2. Collect responses from 2 to 3 participants.
3. Relating to their responses, inform participants how it takes time to get to perfection and knowing something is not enough, one needs practice to get those skills for the perfection.
4. Similarly, linking the explanation inform participants that knowing about septic tank is not enough but needs to practice so as to gain clear idea on constructing septic tank and things one should consider while constructing one, hence, are going for a hands-on practice of constructing a septic tank through an assemblance of life size model.
5. Present learning outcomes of the session.

Hands-on Practice



55 minutes



1. Inform participants that they are now going for a hand on practice by assembling a life size model.

2. For this, inform participants that they will get a 5 pieces model and they are to assemble it considering the points discussed in earlier session.
3. Ask for few volunteers for assembling the model while discussing it with all the participants.
4. Present the presentation on the process of installation/ assemblance of life size model of a septic tank.
5. Provide the pieces of model to participants and ask them to assemble.
6. After assembling the pieces, ask participants to add on the pipes required in the septic tank.
7. Provide 20 to 30 minutes time to assemble the model.
8. Once all parts are assembled, ask for a rationale/ point to prove that they have assembled correctly. The inlet is higher than the outlet, first compart and second compart of the septic tank is correctly understood, etc.
9. Verify the understanding of participants by posing different questions to different participants.
10. In addition, as participants are practicing in a life size model, ask participants if they can answer the size of the model (septic tank) is ideal for how many members of a family. Correct answer: 2-5
11. Further, clarify that as most of the families have 5 members, this is the size that one needs to construct. Any size above this is a waste of resources and any size lesser than this is a burden as they will have to empty it sooner.
12. Further, with the support of the presentation, discuss on the real scenario of septic tank construction and important points while constructing it.
13. Inform participants that after the real scenario that now they are going for a quick review.



30 minutes

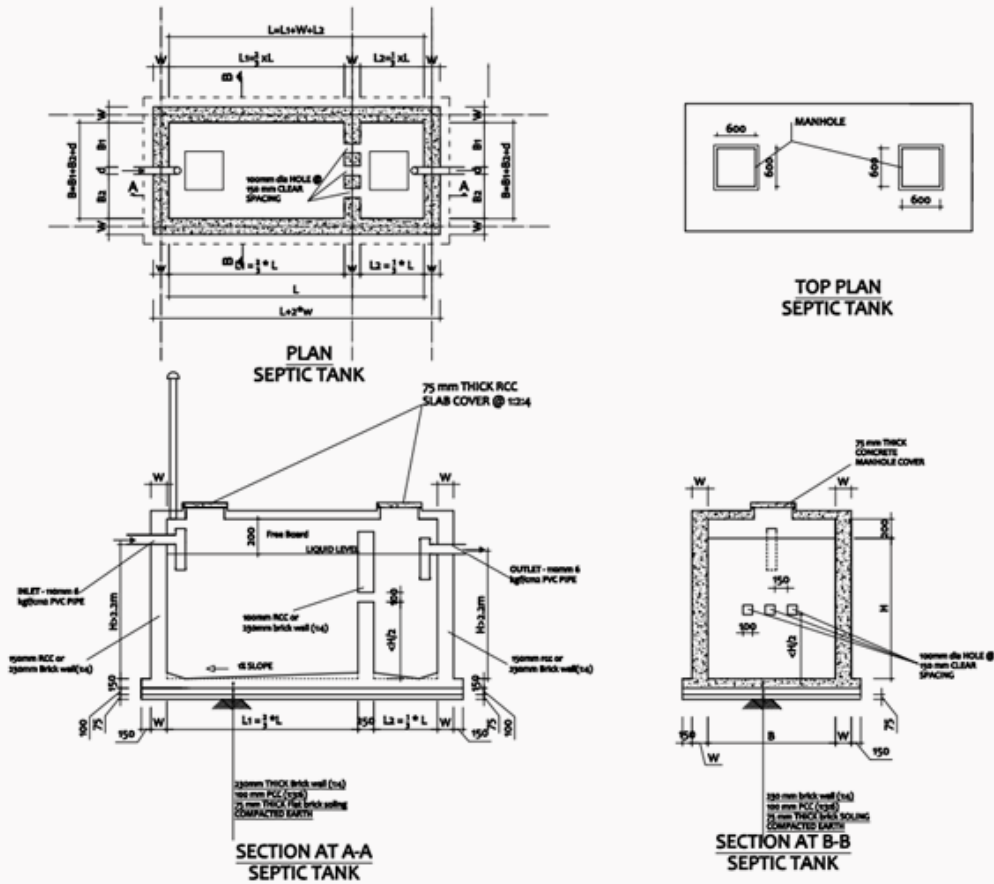
Review



1. For the review, inform participants that they are going for a group work.
2. For this, participants will be divided into 3 groups and each group will get a picture/ design of septic tank and in their groups, participants are to find out or pin-point the common mistakes that occur while constructing a septic tank.
3. Inform participants they have 5 to 10 minutes time to come up with the answer along with the rationale or justification for choosing the point.
4. Divide participants into 3 groups and provide a picture to each group and provide 10 minutes time.
5. After the allocated time, ask a group to present their findings along with their discussion.
6. After the presentation, take views from other 2 groups and correct them if necessary.
7. Repeat the process with other 2 groups as well.

Reflections on Lesson

Option 3



Answers for the group work

Option-1

1. Single Compartment
2. Single Man-Hole
3. No Vent Pipe
4. No outlet

Option -2

1. Length of ST is not in proportion of 2B to 5B.
2. Inlet chamber & Outlet chamber is not in $\frac{2}{3}$ rd and $\frac{1}{3}$ rd as per standard septic tank requirements.
3. No Drop pipe with T connection
4. Inlet and outlet pipe is in same line

Option -3

1. No water Seal
2. Height of hole on baffle wall provided is in $<H/2$.
3. Overall Depth or Height of septic tank is $>2.2m$
4. Free board provided is only 200mm only which we required is 300mm.

Lesson plan 3: Hands-on Practice Presentation Slides

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अभ्यास

स्थानीय टुकुमीहरूको लागि
सेप्टिक ट्यांकी बारे जानकारी सम्बन्धि अभिमुखिकरण
स्रोत व्यक्ति


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सिकाइका उपलब्धिहरू

- सेप्टिक ट्यांकी निर्माणका प्राविधिक पक्ष बारेमा छलफल गर्नका लागि मोडेल निर्माण गर्दै अभ्यास गर्ने

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विषयवस्तु

- मोडेल निर्माण
- अभ्यास
- सेप्टिक ट्यांकी निर्माणमा हुने त्रुटिहरू

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मोडेल निर्माण

- ५ टुकु मोडेल
- चरणबद्धरूपमा जोड्ने
- कुन टुकु वा पाटा कता पदंछ भनि छलफल तथा यकिन गर्ने
- टुकु राख्ने र जोड्ने

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मोडेल निर्माण १



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मॉडेल निर्माण ८



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वास्तविकताया...



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Lesson Plan 4

Orientation Closing



15 minutes

Learning Outcomes



At the end of this session participants will be able to:

1. Evaluate whether learning expectations were met
2. Analyze the orientation and provide feedback on the orientation

Materials



- Orientation closing PowerPoint
- Certificate
- Camera for group photo

Preparation



- Print and prepare the certificates
- Prepare the learning expectations from the opening session
- Choose a place for a group photo



In some cases, a formal closing ceremony will end the orientation. Consult with your host beforehand to determine the protocol and the amount of time required. You may need to adjust your agenda accordingly.



Revisiting Expectations

2-3 minutes



1. Inform participants that they are going for the closing of the orientation.
2. Inform participants that before wrapping up the orientation, they are going to check how much the orientation has covered their expectations.
3. Either bring the sheet with all the expectations from participants to the front of the hall or move to the station with all the expectations.
4. Revise all expectations collected in the opening of the orientation.



Orientation Evaluation

5 minutes

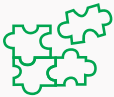
1. Explain that participants are going to evaluate the orientation using their fingers as a score for the orientation.

2. Further, inform participants to come in circle and stand facing out of the circle, keeping their hand at their back.
3. Inform participants as the facilitator instruct to raise their hand, participants are to raise their hand and show a number indicating the evaluation for the orientation.
4. Clarify that 1 is for the least and 5 is the best as an evaluation for the orientation.
5. Ask participants to raise their hands after confirming their understanding of evaluation process.
6. Take a photo of participants evaluating the orientation as a proof.
7. Once all have evaluated, ask participants to take seat and ask 2 participants to volunteer their thoughts about the orientation.
(if there are any female participants, make sure to take a representative thoughts form both gender)



5 minutes

Certificate Distribution



1. Explain participants that they are now going for the certificate distribution and they will be doing the certificate distribution.



TN: Before that, if you are going for the formal closing, arrange the set-up for formal closing. Ask 2 participants to volunteer their thoughts on the orientation, how was the orientation and how they look forward using the information. Ask to handover the certificate to participants through appropriate guest and go for a closing remark from the designated guests as appropriate..

2. Ask a technical expert or a main trainer to hand-over the certificates to each participant.



TN: A facilitator may assist on announcing the name from the certificate and bringing the certificate on a tray.



2-3 minutes

Closing and Group Photo



1. In an informal setting, ask a participant to announce the end of the orientation like in a formal orientation.
2. And ask participants to join for a group photo after the orientation.

Reflections on Lesson

Lesson Plan 4: Orientation Closing Presentation Slides

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अभिमूढिकरण समापन

स्वानीय इकमीहल्को लागि
सेप्टिक ट्याकीबारे जानकारी सम्बन्धि अभिमूढिकरण
सोत व्यक्ति

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शिकाइका अपेक्षाहरूमा पुनःबबलोकन

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प्रमाणपत्र वितरण तथा सामूहिक फोटो

प्रमाण-पत्र

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सामूहिक फोटो

- सामूहिक फोटोको लागि आग्रह गर्नुहोस्
- तानिम समापन गर्नुहोस्

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सहायता र जानकारीका लागि सम्पर्क गर्नुहोस्:

फोन : ९७७-१-४२४४४४४, ४२४४४४४, ४२४४४४४, ४२४४४४४, ४२४४४४४
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तानिम संरचना

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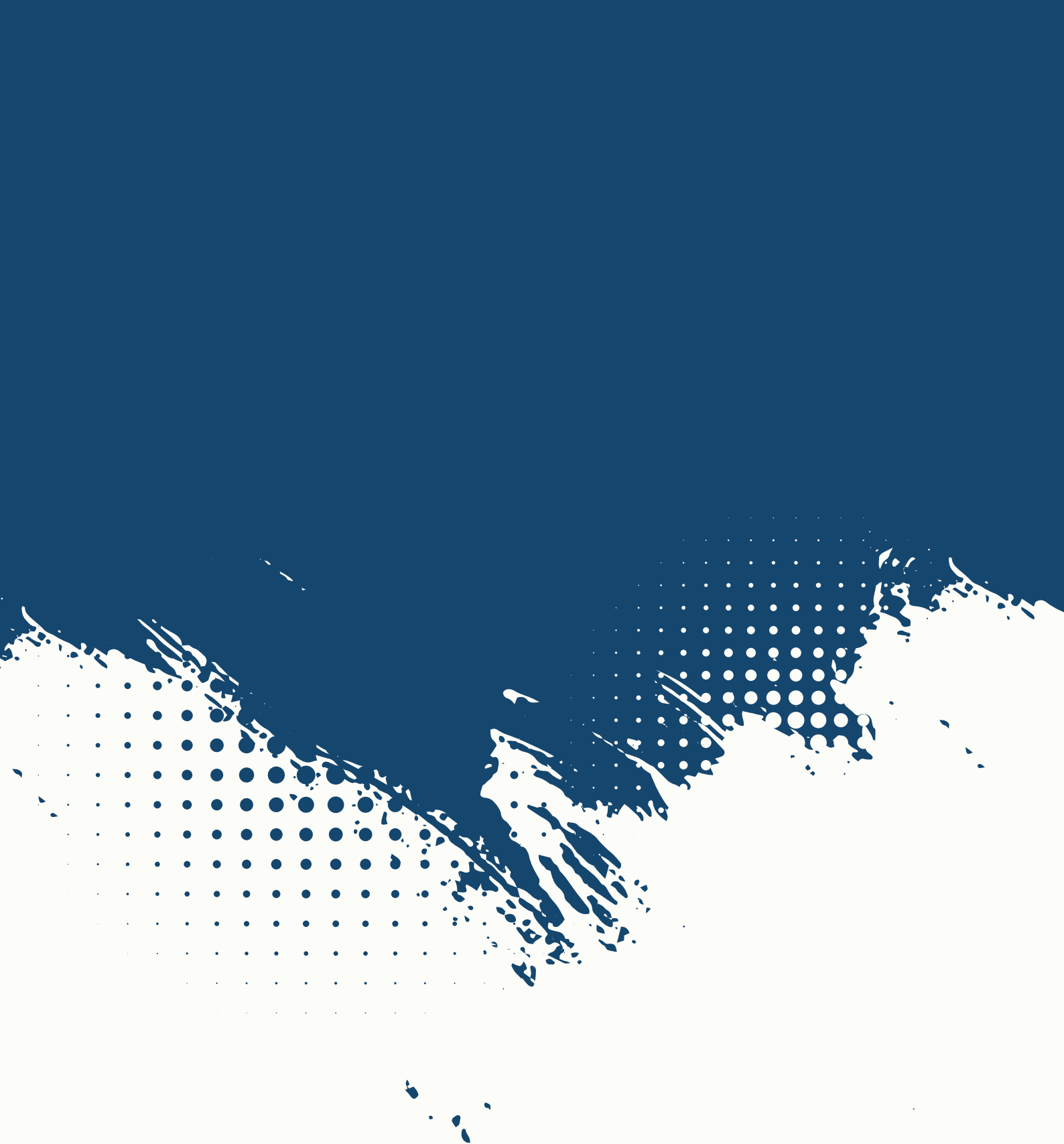
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प्रमाण पत्र वितरण

- सहभागीको सबल पक्ष
- तानिम सफलतापूर्वक समापन भएकोमा बढी श्रमदान
- प्राप्त भएको श्रमदाने अघामी दिनका लागि शुभकामना दिने

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