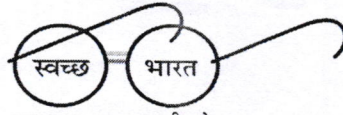




सत्यमेव जयते

Ministry of Urban Development
Government of India



एक कदम स्वच्छता की ओर



USAID
FROM THE AMERICAN PEOPLE

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage



The study/report is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents are the sole responsibility of WSUP Advisory and do not necessarily reflect the views of USAID or the United States Government.



WSUP
Water & Sanitation
for the Urban Poor

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

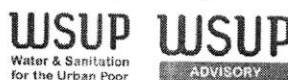
All photographs are by WSUP Advisory India (WAI) unless otherwise mentioned. Data in this is dated September 2016 document and may be used and quoted with due acknowledgement to the organization.

This report is prepared under the programme "Capacity Building for Swachh Bharat Mission – Urban: Technical Support to USAID - Government of India Knowledge Partnership" by Water and Sanitation for the Urban Poor Advisory India (WAI). Greater Visakhapatnam Municipal Corporation (GVMC) is the local government partner. GVMC is supporting the project team for all the tasks under this project

Supported By



Prepared By



Water and Sanitation for the Urban Poor Advisory India

For more details, contact:

Akhilesh Gautam

Office No 1207, 12th Floor,

DLF Tower - B, Jasola District Centre,

New Delhi-110025 INDIA

T: +91 11 49050298; E: agautam@wsup.com



WSUP is a not-for-profit company that helps transform cities to benefit the millions who lack access to water and sanitation. We were created in 2005 as a response to the urban explosion that has left many cities unable to provide basic services, such as access to a toilet or drinking water, to low-income communities. We work alongside local providers, enabling them to develop services, build infrastructure and attract funding so that they can reach low-income communities. To ensure that services can reach as many people as possible, and will exist over the long-term, we have a strong focus on financial viability. This means working with utilities and businesses to build services which generate revenue whilst reaching the most vulnerable urban residents, and advising regulators and governments on how to create an environment which enables businesses to succeed. We are based in the UK with offices in seven countries in sub-Saharan Africa and Asia. As the urban specialist in water and sanitation, we are committed to sharing evidence and approaches so that our innovations can enable change around the world. Since inception we have helped over 10 million people access better water and sanitation services.

WSUP Advisory CIC UK is a Community Interest Company registered in England and Wales (No. 9461206). It is a wholly owned subsidiary of Water & Sanitation for the Urban Poor (WSUP). Profits generated by WSUP Advisory are transferred to WSUP to support its urban WASH development activities. WSUP Advisory is also registered in India as WSUP Advisory India (U90009DL2015PTC287912). WSUP Advisory (WSUP-A) provides technical assistance to those seeking to improve WASH services to low income urban consumers across the world. By providing a consultancy service covering all aspects of low income service provision, drawing heavily on its own experience of delivering effective service models under the WSUP Programme, WSUP-A are scaling up impact for low income consumers.

Disclaimer

The scope of this report is to narrate step by step procedure for emptying the septage from septic tank and disposal in to the pumping station of the Under Ground Drainage network. We are sharing here the experiences from the city of Visakhapatnam where we are working on the ground with the support of GVMC.

This report refers to the approaches we took for making the city of Visakhapatnam sustainable in septage management and to think beyond an open defecation free city. We have prepared this document after through discussion with in-house team of experts, various stakeholders and possible reference of some of the published document by leading organizations in urban sanitation sector. We believe this information to be authentic and therefore have not conducted an independent audit of the same.

Nothing contained herein, to the contrary and in no event, shall WAI or any of its staff or any of its contractors be liable for any loss of profit or revenues and any direct, incidental, consequential damages incurred by any user of this document. In case this document is to be made available or disclosed to any third party, this disclaimer must be issued to the concerned party.

Acknowledgements

WSUP (Water and Sanitation for the Urban Poor) Advisory India is working closely with Ministry of Urban Development, GoI in support of Swachh Bharat Mission (SBM) at national, state and city level under the USAID funded programme "Capacity Building for Swachh Bharat Mission - Urban: Technical Support to USAID - Government of India Knowledge Partnership."

Standard Operation Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage helps in carrying out the task of emptying, conveyance and disposal of the septage generated in the septic tank, in a systematic, safe and hygienic ways and enable the operators to do the task effectively and in co-ordinated ways.

This document is a success due to the valuable recommendation from Ministry of Urban Development, Government of India. We would like to thank Mr. Praveen Prakash, IAS, and the then Joint Secretary & Mission Director (SBM - U) for guiding and encouraging us in bringing this document.

Special thanks to Mr. Vinod Kumar Jindal, IAS and Joint Secretary & Mission Director (SBM - U), for supporting us and throwing up the lights in bringing up this document in to public domain.

Acknowledgement is also due to the GVMC team, in particular Mr. M.Hari Narayanan, IAS, Municipal Commissioner, GVMC, with a special mention to Mr. Praveen Kumar, IAS, District Collector, Visakhapatnam.

Last but not the least, our earnest and sincere thanks to the American People, as these documents have seen the light of the day, due to support received from USAID and its team members.

Table of Contents

1. Introduction	6
2. Training on use of SOP	6
3. Record-keeping	6
4. On Order Booking	7
5. Access and Parking at the Point of Origin of Septage	8
6. On arriving at the Household.....	8
7. Pre-emptying Tasks.....	8
8. Emptying	9
9. Decoupling of Pumping Lines, Record Filling and Heading to DS.....	10
10. Right of Access	10
11. On-site vehicle circulation – Access.....	10
12. VTO Arrival at DS.....	11
13. Receiving the Load	11
14. Septage inspection, decision to sample, and sampling.....	12
15. Load ACCEPTED: Empty the SIT into the inlet works.....	13
16. Load REJECTED: VTO to remove the load from the SIT.	13
17. Discharge termination and decoupling	14
18. Cleaning the VTO	14
19. Cleaning the SIT	14
20. Activity completion and manifest form signing.....	14
21. On-site vehicle circulation – Egress.	15
22. Managing septage spills.....	15

Standard Operating Procedure (SOP).

SOP for:	Emptying of Septage from Household Septic Tank for Discharge in to Pumping Stations of UGD Network
SOP user:	Vacuum Trucks Operators(VTOs)
Date produced:	07 May 2017
Produced by:	WSUP Advisory India (WAI)
Accompanying documents:	<ul style="list-style-type: none"> • Health & Safety Plan for the Disposal Site (DS) • SOP for Disposal Site Operators (DSOs)

Revision History:

Revision	Date Approved by UGD E.E.	UGD E.E. Signature	Sections modified

List of Acronyms:

VTO	Vacuum Truck Operator, meaning the driver.
VT	Vacuum Truck, meaning the vehicle.
DS	Disposal Site, meaning the general site where the discharge will take place (Pump House, Sewage Treatment Plant)
UGD	Under Ground Drainage
DP	Disposal Point, same as defined under the head DS
PM	Plant Manager, meaning the person in charge of the plant Operation & Maintenance
SIC	Shift In Charge, meaning the person in charge of the particular shift for field operation and maintenance
DSO	Disposal Site Operator, meaning the Field Operator responsible for Inlet point operation at Pump House location
DPO	Disposal Point Operator, same as defined under the head DSO
PPE	Personal Protective Equipment
SMF	Septage Manifest Form
PH	Pump House, meaning the unit in the plant which fed raw sewage to the plant through pumping
STP	Sewage Treatment Plant, meaning a plant where the raw sewage is being

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

	treated before disposal to environment
SIT (Septage Inspection Tank)	A concrete box unit, of known volume (2m ³), located immediately adjacent to the existing PH or STP inlet, with the ability to; safely receive septage from VTOs; inspect the septage; and discharge the septage safely into the inlet works or allow for its removal if deemed unsafe for introduction into the UGD network.
SRC (Septage Reception Chamber)	A ground-level chamber with protective concrete apron, to safely receive septage from VTOs; and transfer by piped gravity flow to the SIT. An SRC is only required where there is no direct VTO access to the SIT.
SMS	Short Message Service
GPS	Global Positioning System

1	Introduction
1.1	<ul style="list-style-type: none"> This SOP on “Emptying of Septage from Household Septic Tank” should be read in conjunction with the documents mentioned in the title box. Without reference to these other documents, the comprehension of the SOP with regards to the VTO operations will be limited. The SOP should be read and understood by the VTO before the actual operation takes place, any uncertainties or questions should be raised before the actual operation takes place.
2	Training on use of SOP
2.1	<ul style="list-style-type: none"> The SOP has been written as simply as possible, so as to be understood by the first-time user. There is a list of acronyms on the title page.
2.2	<ul style="list-style-type: none"> In order to have confidence in the execution of duties contained herein, VTOs are requested to attend the one-day Septage Management Training course, after which they are certified as an official VTO by the ULB.
3	Record-keeping
3.1	<ul style="list-style-type: none"> Record-keeping is an integral part of managing UGD infrastructure and should be carried out diligently and accurately. Record-keeping should be undertaken with a view to satisfying the following main objectives: <ol style="list-style-type: none"> Compliance with legal requirement that may be required by statutory body like National Green Tribunal (NGT), Central Pollution Control Board (CPCB) and State Pollution Control Board (SPCB) for correct discharge of septage.

	<ol style="list-style-type: none"> 2. Asset management tool for UGD infrastructure management. 3. Evidence of VTO activity on the site, to be used to evaluate VTO performance, which may be used for numerous purposes, including billing, fines, warning including suspend from duty for repeating the same twice and in extreme case cancellation of license repeating the same thrice. 4. Record of process and flow data concerning septage inflow, to be used to support periodic analysis of plant performance, and trouble-shooting. <ul style="list-style-type: none"> • Record-keeping for septage management is simplified to 2 documents: Septage Manifest Form (SMF), VTO Discharge Logbook.
<p>3.2</p>	<p>A Septage Manifest Form (SMF)</p> <ul style="list-style-type: none"> • The SMF (shown in Annex A of this SOP here in after) originates at the septage origin by the VTO at the household level, and is completed at the DS. The manifest form should be filled out in triplicate and filed as follows: <ol style="list-style-type: none"> 1. Copy to be handed over to the septic tank owner 2. Original to remain on DP site; the DSO/PM will keep all the forms for full week and will return to GVMC on following Monday of the week after verifying and entering in to the VTO Discharge Log book. 3. Copy to be held by VTO.
<p>3.3</p>	<p>A VTO discharge logbook.</p> <ul style="list-style-type: none"> • The logbook (shown in Annex B of this SOP here in after) provides an overview of all VTO operations on the site, with each line representing a VT discharge. The logbook does not contain all of the information contained within the SMF. This is to be filled up by the DSO/PM for office record.
<p>4</p>	<p>On Order Booking</p>
<p>4.1</p>	<ul style="list-style-type: none"> • On receiving the order booking from the household, the VTO will give a call to the number received through SMS and will talk to the house owner to identify the location and get an idea about the position of septic tank from the access road to guess the length of the pumping lines required. • Checks the functioning of vacuum emptier and equipment such as shovel, soil probe, including devices used for breaking up scum layer and keeps ready all the PPE (such as gloves, boots, hat, face mask, Davy's lamp) in good condition for use. • The VTO should check that there is adequate amount of disinfecting and spill control equipment such as lime available with him to carry along. • Check hoses, inspect for cracks and wear and discard or repair worn and broken

	<p>hoses. Connecting the hose in the correct manner using the clamp style fitting ensures a tight and leak proof connection. He must avoid use of twine and plastic for making connection that may cause leaks.</p> <ul style="list-style-type: none"> • Check that the Global Positioning System (GPS) installed in the vehicle is in good working condition.
5	Access and Parking at the Point of Origin of Septage
5.1	<ul style="list-style-type: none"> • The VTO on arriving at the household must follow the traffic laws and park the vehicle by leaving space for other vehicle to pass without difficulty. In areas having congestion the VTO must ensure that there is no traffic jam that may arise due to parking.
6	On arriving at the Household
6.1	<ul style="list-style-type: none"> • Upon arrival at the household, the VTO must met with the building owner. If the owner is absent, the VTO must wait until he is available. • The VTO must ensure that the booking has been done by the owner of the household and ask for OTP (One-time Password) to make sure of the identification. • The owner also makes sure that the same OTP has also been received by the VTO and confirm that the right VTO has arrived at his/her premises.
7	Pre-emptying Tasks
7.1	<ul style="list-style-type: none"> • At the outset of the whole cleaning process, the VTO must put on the Personal Protective Equipment (PPE) and make himself protected from possible anticipated hazards. • The VTO must do a quick reconnaissance survey to identify the position of septic tank, manhole cover and make himself familiar with the access route for laying of pumping lines. • He must open the lid of the manhole and allow some time to release the gases present inside the septic tank and make sure no one is very close to the septic tank for some time. The VTO must not lean over or crouch down at the tank opening. • Before starting the pumping operation, the VTO must measure the thickness of the scum layer and depth of sludge layer below the outlet tee of the tank and then break the scum layer mix the sludge layers with the liquid portion of the tank. The height of sludge layer must be recorded by the VTO with the last length of the hose.

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

	<ul style="list-style-type: none"> • The VTO should look for possible damages to the structure by visual inspection. Check the water level and get clues on tank condition: high levels (above outlet level) indicate a clogged outlet; low levels (below outlet level) indicate a leakage in the tank (or tank is not in use). • On identifying the access, the VTO should lay down the pumping vacuum lines from the truck to the septic tank. The VTO make sure that, at this time the vacuum lines are not connected to the vacuum truck, nor has the vacuum pump been turned on.
8	Emptying
8.1	<ul style="list-style-type: none"> • In preparing to connect the pumper hose to the truck's transport tank the VTO must first turn on the vacuum pump. This precaution is necessary by the VTO as opening the valve at the bottom of the vacuum tank without first turning on the vacuum pump can permit septage to flow back out of the tank on to the operator. • The VTO must listen to the truck's vacuum pump motor to assure that the vacuum pump is operating correctly. If the pump is blocked or jammed it will need to be cleared or repaired. • Once the vacuum pump is operating satisfactorily the VTO keep himself ready to remove the vacuum truck tank valve cover and attach the vacuum line to the vacuum truck. • With vacuum truck's vacuum pump operating properly and septage pumping hose laid in place, and with first hose section already connected to the pumper truck, the VTO connects the remaining sections of the vacuum line and place the pumping line in to the manhole of the septic tank. • During pump operation, the VTO must use the end hose pipe to continuously break the scum layer and keep mixing the sludge with the top water layer. • After the pumping is complete, the tank must be checked for remaining sludge. If there is still some sludge inside the tank, pump back procedure may be initiated by operating the pump in reverse suction way. Direct the septage towards the sludge under pressure and mix up the sludge mass making it suitable to be pumped out. • Start the vacuum pump in suction position and pump out the remaining septage from the tank by leaving 1 to 2 inches thickness of sludge thereby allowing microorganism to present inside the tank to act upon the new incoming faecal waste.

9	Decoupling of Pumping Lines, Record Filling and Heading to DS
9.1	<ul style="list-style-type: none"> • On completion of the pumping the VTO decouples the pumping lines by removing the clamp fitting along the length of the pipe and place the pipes at correct position in hose rack of the VT. At this time, he must also put all the equipment in position in the hose rack. • Check for any spills and add disinfectants solutions such as hydrated lime to the affected areas. • The VTO must fill the Septage Manifest Form (SMF) in presence of the household owner and leave one duplicate copy with the owner after putting his signature on to it. • On handing over the duplicate SMF to the owner, the VTO must leave the premises, drives his vehicle and follow the shortest route to the designated DS following traffic rules.
10	Right of Access
10.1	<ul style="list-style-type: none"> • VTOs are welcome to discharge septage at the DS during its reception hours (Generally start from 8.00HRs and end 22.00HRs), when there is DSO positioned on the site to receive the septage.
10.2	<ul style="list-style-type: none"> • VTOs are received at the site entrance by the guard. • Only licensed VTOs are allowed on site. VTO license # should be clearly displayed on the inside front windscreen on the driver's side. VTO license must be valid at the time of access.
10.3	<ul style="list-style-type: none"> • Before entry to the site, the guard must communicate to the SIC that the VTO is on the way to the DS, the SIC will inform the DSO, so that he can arrive at the DS to receive the VTO.
11	On-site vehicle circulation – Access
11.1	<ul style="list-style-type: none"> • Once admitted on-site, VTOs must follow the approved route to the DS, as displayed on site signage. • Any deviation from this route will be in contravention of the site H&S plan and can be strictly dealt with by any on-site agent of the UGD division. In this case, the VTO must return to the approved route. • Only in extreme cases will a deviation from the approved route be sanctioned, in which case the deviation will be clearly communicated to the VTO driver by the

	guard.
12	VTO Arrival at DS
12.1	<ul style="list-style-type: none"> • Upon arrival at the DS, the VTO must be met by the DSO. If the DSO is absent, the VTO must wait until he is available. • The DSO will identify himself to the VTO and receive the SMF, verifying key information either by visual inspection (e.g. VTO license ID#) or direct questioning (e.g. septage origin).
12.2	<ul style="list-style-type: none"> • If the DSO verifies the SMF and its information, a verbal instruction is passed from the DSO to the VTO, to approach ('back up to') the SIT/SRC, and connect the VT discharge pipework to the DS pipework. The DSO maintains a role of director and supervisor during the VTO access activity and guide the vehicle and VTO safely on-site, and the VTO must listen to the instructions of the DSO. • During the approach and pipe coupling process, the VTO makes himself responsible for VT and make connections of disposal pipe to existing DS pipe at the SIT/SRC. The DSO makes sure all the connections are undertaken in safe manner. The DSO keeps himself vigilant to all other operations, equipment and personnel sharing the site space.
13	Receiving the Load
13.1	<ul style="list-style-type: none"> • Ensure that both DSO and VTO are wearing the correct PPE such as gloves, mask, gumboot, apron and uniform etc.
13.2	<ul style="list-style-type: none"> • The pipe couplings between the VT and the receiving point (SIT/SRC) should be correctly aligned and tightened (Fig: 1) so as to allow smooth septage flow through the pipe connection. Receiving point: <ul style="list-style-type: none"> • Where only SIT option is available, VTO should connect directly to the existing pipe of SIT to discharge. • Where both SIT and SRC options are available, VTO should connect directly to the existing pipe of SRC to discharge, which will then discharged to SIT. • Both VTO and DSO are to visually and physically inspect the DS connection, and verbally agree to proceed with the discharge only if both parties are satisfied with the leak proof joint of the pipe connection.

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

13.3	<ul style="list-style-type: none"> The VTO and DSO take up their positions adjacent to the VT discharge pipe and the SIT respectively. No discharge is to occur until both party's signal that they are in position. Upon signal from the DSO, the VTO will open the valve on the septage discharge pipe, and release the septage into the DS inlet. This action is called "receiving the load".
13.4	<ul style="list-style-type: none"> The DSO has the power to signal to the VTO to close the valve and terminate the septage flow at any time during the process. The VTO may also close the valve and terminate the septage flow without receiving signal from the DSO. In a normal case, the DSO will only signal to the VTO to stop the discharge when the septage approaches the maximum volume of the SIT (2m³), which is just before the septage begins to overflow into the PH/STP and on complete drain off of the septage, where the same is discharge directly in to the inlet works.
13.5	<ul style="list-style-type: none"> When the SIT is full to its maximum volume capacity, or when the VT has been emptied completely, a volume is recorded in the logbook.
13.6	<ul style="list-style-type: none"> The VTO will keep the discharge valve closed and not recommence the flow until signalled to do otherwise by the DSO.
<p>14 Septage inspection, decision to sample, and sampling</p>	
14.1	<ul style="list-style-type: none"> Allow for any smells, gases or vapour, to dissipate before commencing inspection.
14.2	<ul style="list-style-type: none"> With the flow stopped, the DSO inspects the influent septage inside the SIT with regards to the following: <ol style="list-style-type: none"> <i>Volume of SIT filled</i> (measured as increments of 1m³, until max. of 2m³). <i>Odour</i> (Does the septage smell extraordinary? - note especially any sulphurous (rotten eggs) smells) <i>Colour</i> (Note the colour of the discharge, is anything extraordinary?) <i>Solid waste</i> (Is there a significant observable presence of solids, rags, diapers, other solids?) <i>Soil and grit</i> (Is there a significantly observable presence of grit, gravel, stones, sand?) <i>FOG scum</i> (Is there a significant presence of Fats, Oils or Greases, which create a floating scum layer on top of the septage discharge?) Any significant inspection comments are recorded by the DSO on the SMF.

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

14.3	<ul style="list-style-type: none"> • After the visual and the smell inspection, a decision is made whether to sample the discharge or not. Sampling decision should be determined based on the instruction of authority involved onlyby: <ul style="list-style-type: none"> • Origin of septage (e.g. industrial waste may contain heavy metals or hydrocarbons) • Visual/smell inspection suggests potential process complications. • Specific demand for sampling by client. • VT discharge is selected for random sampling. • If samples are taken, fill in the appropriate section on the manifest form, and ensure the proper management of samples until delivery at the laboratory.
15	Load ACCEPTED: Empty the SIT into the inlet works.
15.1	<ul style="list-style-type: none"> • If the DSO accepts the load, i.e. decides to empty the septage discharge from the SIT into the inlet works, the DSO opens up the hand stop on the SIT and discharges the septage load into the inlet works.
15.2	<ul style="list-style-type: none"> • The DSO opens the valve of the out let pipe of the SIT fully and allow the septage to flow in to the inlet work chamber.
15.3	<ul style="list-style-type: none"> • When all septage is drained from the SIT, the DSO closes the SIT outlet. • The DSO then signals to the VTO to repeat steps 7.3 to 7.6 and 9.1 to 9.3 until the VT has been completely emptied.
16	Load REJECTED: VTO to remove the load from the SIT.
16.1	<ul style="list-style-type: none"> • If the DSO rejects the load based on inspection as per 8.2, the discharge activity is terminated and the VTO must remove the load from the SIT. • The DSOrequests that the VTO to terminate discharge and decouple. (See below/here in after). • The VTO must then reposition the VT and suction pipework in order to remove the load from the SIT. • Once the load is completely removed, the rejected load is recorded on the SMF.
16.2	<ul style="list-style-type: none"> • A 'rejected load work flow' is now triggered, in order to investigate the origin of the septage, and determine an appropriate discharge location for the rejected load.

17	Discharge termination and decoupling
17.1	<ul style="list-style-type: none"> • After the DSO accepts the entire load, and the VTO is certain that all septage has been discharged from the VT, both parties signal to terminate the discharge, and the VTO closes the valve of the discharge pipe. • The DSO makes sure the VTO decouples the pipework's and be sure of that any spills are contained within the SIT/SRC.
18	Cleaning the VT
18.1	<ul style="list-style-type: none"> • VT cleaning occurs at the same location as the DS, after decoupling of the VT from the DS. • Allow for any smells or gases to dissipate before commencing the VT cleaning operation.
18.2	<ul style="list-style-type: none"> • Assure that all wash water, from internal and external VT wash down, is captured and contained and drains back to the inlet works. • Wash water volume and concentration is assumed to be negligible and is not recorded.
19	Cleaning the SIT
19.1	<ul style="list-style-type: none"> • When all septage has been drained from the SIT into the inlet works, or removed by the VTO during the full day operation, it is the responsibility of the DSO to hose down the SIT for cleaning purpose and the valve is opened to allow the wash water to drain in to the inlet works. • Wash water volume and concentration is assumed to be negligible and is not recorded.
19.2	<ul style="list-style-type: none"> • Septage is usually not homogenous, and there may be some specific handling requirements for septage components which do not easily drain from the SIT: <ul style="list-style-type: none"> ○ Scum: should drain with the addition of wash water, but may adhere to walls and floor and require some brushing to aid removal. ○ Effluent: should drain easily by gravity. ○ Sediment: if high solids content, will require some pressurised wash water, or more physical displacement with a brush or a shovel.
20	Activity completion and manifest form signing
20.1	<ul style="list-style-type: none"> • At end of activity, when all parties are agreed that discharge is complete,

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

	<p>manifest is signed by DSO and then VTO. Copies are kept accordingly.</p> <ul style="list-style-type: none">• During VTO egress from the DS, DSO must be vigilant and make sure for the safety of all other operations, equipment and personnel sharing the site space.
21	On-site vehicle circulation – Egress.
21.1	<ul style="list-style-type: none">• When leaving the site, VTOs must follow the approved route as displayed on site signage. Any deviation from this route will be in contravention of the site H&S plan and can be strictly dealt with by any on-site agent of the UGD division. In this case, the VTO must return to the approved route.• Only in extreme cases will a deviation from the approved route be sanctioned, in which case the deviation will be clearly communicated to the VT driver by the guard.
22	Managing septage spills
22.1	<ul style="list-style-type: none">• DS infrastructure is designed in order to catch spills from the VT during pipe disconnection septage post-discharge. These spills should be caught within the bunded DS area, and washed back into the inlet works during VT cleaning. No recording of these 'normal' spills is required.• 'Abnormal' spills require both special clean-up and recording. Abnormal spills are defined as:<ul style="list-style-type: none">• Septage spills which occur outside of the bunded DS area; AND• Septage spills which have volume > 20litres.
22.2	<ul style="list-style-type: none">• The clean-up procedure for abnormal spills is:<ul style="list-style-type: none">• Recover spilled septage and return to the SIT using a shovel and bucket.• Clean and disinfect spill patch using bleach or lime.

References

Centre for Science and Environment (CSE), "Policy Paper on Septage Management in India", May 2011.

Urban Development Department, Government of Maharashtra, "Guidelines for Septage Management in Maharashtra", February 2016.

US EPA (United States Environmental Protection Agency), "Guide to Septage Treatment and Disposal", September 1994.

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage

US EPA (United States Environmental Protection Agency), "Decentralized Systems Technology Fact Sheet Septage Treatment/Disposal", September 1999.

Oxfam, "Septage Management Leader's Guidebook, Philippines Edition", 2016. (Esp. Steps 15 & 16)

Dave Robbins, "Septage Management Guide for Local Governments", September 2007. P.20 & 21.32-43.

Mukheibir P. (2015), "A guide to septage transfer stations". Prepared for SNV Netherlands Development Organisation by Institute for Sustainable Futures, University of Technology Sydney.

Fecal Sludge Management Systems Approach for Implementation and Operation, Strande et al. (2014), IWA Publishing.

Free Encyclopedia of Building and Environmental Inspection, Testing, Diagnosis, Repair.

Annex A: Septage Manifest Form (SMF)

Date:

Time of Collection:

Space for STAMP by VTO, STAMP should contain Name, License Number and Vehicle Registration Number

1) Septage Origin

Origin type:	
Residential	<input type="checkbox"/>
Institutional	<input type="checkbox"/>
Commercial	<input type="checkbox"/>
Other	<input type="checkbox"/>
Name (household or unit, mention unit numbers if more than one household)	<input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/>
Ward No:	
Phone Number	
Volume emptied (in m³), mention separately for each household	<input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/> <input style="width: 50px; height: 20px;" type="text"/>

2) Septage Discharge

DSO Name	
Designated Disposal Site	
Septage Inspection comments: <i>(Odour / Colour / Solid waste / Soil and grit / FOG scum)</i>	
Sample taken?	<input style="width: 50px; height: 20px;" type="text"/> Yes <input style="width: 50px; height: 20px;" type="text"/> No
Load Accepted?	<input style="width: 50px; height: 20px;" type="text"/> Yes <input style="width: 50px; height: 20px;" type="text"/> No
Load Rejected?	<input style="width: 50px; height: 20px;" type="text"/> Yes <input style="width: 50px; height: 20px;" type="text"/> No
Volume emptied (in m³)	

Sign of VTO

Sign of DSO

Date of Discharge:

Time of Discharge:

Annex B: VTO Discharge Logbook

Discharge Location.....

Discharge #	Date	Time	VTO license #	Accepted?	Sampled?	Volume emptied (m ³)
001						
002						
003						
'n'						

Standard Operating Procedures for Vacuum Truck Operators for Emptying and Disposal of Septage



एक कदम स्वच्छता की ओर



सत्यमेव जयते

Ministry of Urban Development
Government of India

www.moud.gov.in

www.swachhbharaturban.gov.in

www.swachhbharat.mygov.in

