PUBLIC HEALTH PROGRAMMES

ZAMBIA QUALIFICATIONS FRAMEWORK (ZQF)

SYLLABUS FOR

SKILLS AWARD IN MANUAL EMPTYING OF ON-SITE SANITATION SYSTEMS
CHART NO.404

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ACRONYMS

CBE	-	Community Based Enterprise
CSO	-	Central Statistics Office
CUs	-	Commercial Water Utility Companies
EMA	-	Environmental Management Act
FS	-	Faecal Sludge
FSM	-	Faecal sludge management
FSTF	-	Faecal Sludge Treatment Facility
GFA	-	GFA Consulting Group
GIZ	-	Deutsche Gesellschaft für Internationale Zusammenarbeit
IEC	-	Information, Education and Communication
LA	-	Local Authority
LCC	-	Lusaka City Council
LSWC	-	Lusaka Water and Sewerage Company
MLGH	-	Ministry of Local Government and Housing
MOH	-	Ministry of Health
NWASCO	-	National Water Supply and Sanitation Council
OSS	-	On-site sanitation
PH	-	Public Health
PHA	-	Public Health Act
PUAs	-	Peri-Urban Area
SNDP	-	Seventh National Development Plan
TEVETA	-	Technical Education, Vocational and Entrepreneurship Training
VTO	-	Vacuum Tanker Operator

WARMA	-	Water Resources Management Authority
WHO	-	World Health Organisation
ZABS	-	Zambia Bureau of Standards
ZEMA	-	Zambia Environmental Management Agency

ABOUT TEVETA

The Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) is an institution established under TEVETA Act No. 13 of 1998 read together with the Amendment Act No. No 2005. Its functions include, to regulate, coordinate and monitor education, vocational and entrepreneurship training in consultations with stakeholders.

TEVETA executes its regulatory function through the provision of services, amongst others, the development, review and approval of TEVET Curricula in consultation with industry, employer, employees and other stakeholders.

1.0 ACKNOWLEDGEMENTS

The Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) wishes to express sincere appreciation to the following persons who participated in the development of the Skills Award in Manual Emptying of On-Site Sanitation Systems

S/N	Surname	Position	Organisation
1.	Davies Archer	Team Leader	GFA Consulting Group
2.	Kambole M. Sankwe	Faecal Sludge Management Advisor	GFA Consulting Group
3.	Mwaanga Herbert	Capacity Development Advisor	GFA Consulting Group

TEVETA would also like to express sincere appreciation to GIZ, though GFA, for providing the resources used in developing this curriculum.

2.0 RATIONALE

Faecal sludge management (FSM) covers the whole chain from containment, emptying and collection, transportation, treatment and disposal and end-use. Faecal sludge management (FSM), nonetheless, is applied to the context of onsite sanitation (OSS) systems only. This is particularly important for Zambia where in general close to 85 percent of the population relies on on-site sanitation system. CSO (2016) showed that 77 percent of Zambians depended on OSS system while about 15.6 percent of the population relied on off-site sanitation, i.e. sewer connections and the remaining 7.4 percent used other types of toilet facilities or none at all. These ranged from aqua-privy (0.1 percent); bucket/ other container (0.1 percent), and other types of toilet facilities (3.2 percent) while the population of Zambia that never used any form of toilet facility accounted for 4.1 percent.

Sanitation service provision in the City of Lusaka is not any different. Almost 90 percent of residents in the City of Lusaka use OSS facilities consisting of septic tanks (22 percent), pour flush latrines (10 percent), improved pit latrines (50 percent), and traditional latrines (8 percent), with only 9 percent of households connected to sewers and the remaining 1% defecating in the open (LWSC, 2017). Specifically, Lusaka has a total sewer network of 480 km, serving only 30 percent of the city area (10-15 percent of the population). Thus, about 85 percent of the City is served by on-site sanitation system (OSS) and 90 percent of OSS are pit latrines which are poorly constructed and located in peri-urban areas (PUAs), a home for at least 70 percent of all residents in Lusaka.

Therefore, as a way to safe guard public and environmental health, a well-defined and grounded FSM programme anchored on good technological choices of infrastructure, facilities and services across the whole sanitation services chain; and supported by effective information, education and communication (IEC) and functional regulatory framework, is desired. As such, emptying of OSS facility defines the first and most important step in achieving a sustainable FSM system. This, nonetheless, does not only depend on the type of OSS facility but the ease of emptying of such a facility as well. The type of OSS facility greatly impacts on the quantity and characteristics of the faecal sludge (FS) contained in OSS containment

facility. Whilst the quantity and characteristic of FS are a prerequisite for the selection and design of technical options and ultimately influence the choice of the treatment facility (volume, technology, etc), these are, however, different from town to town. The ease with which any OSS facility is emptied, in principle, contributes to the overall service delivery and sustainability of the FSM programmes, and ultimately the protection of public and environmental health.

As it is, Zambia does not have any nationally recognized training programme to certify OSS pit emptier. This is despite manual pit emptying being practiced in various parts of Zambia, particularly in PUAs where not only the majority of the urban population live but also where OSS systems are prevalent. Therefore, this Skills Award in Manual Pit Emptying will guarantee that OSS Manual Pit Emptier are not only formally trained in the skills required for emptying OSS systems in a safe and hygienic manner and safely containing it in readiness for collection and transportation for onward treatment at the faecal sludge treatment facility (FSTF) but also trained in the hazards involved in undertaking such works.

3.0 PROGRAMME PURPOSE

The purpose of the programme is to equip trainees with appropriate knowledge, skills and attitudes to effectively and professionally carry out manual emptying of faecal sludge in a safe and hygienic manner.

4.0 PROGRAMME OUTCOMES

On completion of the programme the trainee will be able to:

4.1 Safeguard on-site sanitation work environment
4.2 Use manual emptying technologies
4.3 Empty on - site sanitation systems in a safe and hygienic manner
4.4 Conduct clean-up, disinfection and restoration works on the emptied on - site sanitation systems facility
4.5 Collect data on the emptied on - site sanitation systems facility
4.6 Communicate good user practices for on - site sanitation systems
4.7 Operate and maintaining manual emptying technologies

4.8 Interface with the clientele

4.9 Maintain good safety and health at work place

5.0 PROGRAMME DURATION

2 weeks or 60 notional learning hours.

6.0 COURSE OUTLINE

Module No.:	Title	Number of Hours
404-01-A	Manual Pit Emptying of On-Site Sanitation Systems	60 Hours
404-02-A	Basic Customer Relations	40 Hours
404-03-A	Entrepreneurship	
	Total	100 Hours

7.0 TEACHING/LEARNING STRATEGIES

- Interactive lectures
- Group discussions and report back
- Role plays
- Field work
- Class exercises

8.0 PROGRAMME EVALUATION

TEVETA shall evaluate the programme as follows:

8.1 Formative Evaluation

8.1.1 Purpose

To determine on an on-going basis, whether the programme is being implemented as planned and to provide advice on improvements.

8.1.2 Major areas of evaluation

Course aims and objectives, trainees' entry requirements, course content, teaching and learning activities, learning resources, qualifications of trainers, accreditation of training institutes.

8.1.3 Evaluation instruments

Questionnaires, structured interviews, observations, checklists, examination/test records, participation and attendance in sessions.

8.1.4 Sources of information

Trainees, trainers, administrators and trainees' records, training institute.

8.2 Summative Evaluation

8.2.1 Major areas of evaluation

Course aims, trainees' entry requirements, course content, learning resources, teaching/learning activities, qualification of trainers, assessors and examiners, accreditation of training institutes, and graduates' performance in employment in accordance with qualification descriptions.

8.2.2 Evaluation instruments

Questionnaires, structured interviews, observations, checklists, records, final integrated examinations.

8.2.3 Sources of information

Trainees, trainers, assessors, examiners, administrators, sponsors, graduates' employers, training institutes, and the general public.

9.0 TRAINEE ENTRY REQUIREMENTS

9.1 Candidates shall possess a minimum of Grade 9 certificate

9.2 Basic reading and writing skills

9.3 Basic arithmetic skills

10.0 TRAINEE ASSESSMENT

10.1 Final Examinations 100%

10.2 Pass Mark 75%

11.0 ATTENDANCE

The trainee must have an attendance minimum of 85%, to be eligible for the final examinations.

12.0 PROGRESSION REQUIREMENTS

12.1 Failures

Candidates failing the module shall be allowed to repeat it

12.2 Exemptions

As per TEVETA Guidelines on exemptions and Bridging courses

13.0 STAFFING

13.1 Minimum of craft certificate with two years relevant working experience

13.2 Diploma in water and sanitation engineering

13.3 A teaching qualification from a teachers' training college

13.4 All trainers must be accredited by TEVETA.

14.0 CERTIFICATION

Successful candidates will be awarded a Skills Award Certificate in Manual Emptying of OSS Systems by the Technical Education Vocational and Entrepreneurship Training Authority (TEVETA).

MODULE: 404-01-A MANUAL EMPTYING OF ON-SITE SANITATION SYSTEMS

Module Purpose

To equip trainees with knowledge, skills, and appropriate attitudes to effectively and efficiently empty on-site sanitation systems.

Nominal Duration: 70 Hours **Credits: 7.0**

MODULE LEARNING OUTCOMES:

On completion of this module, trainee will be able to:

1. Check the OSS system building for structural problems
2. Use manual on-site sanitation emptying technologies
3. Empty on-site sanitation systems in a safe and hygienic manner
4. Conduct clean-up, disinfection and restoration works on the emptied OSS facility
5. Collect data on the emptied on-site sanitation facility
6. Communicate good user practices for on-site sanitation systems
7. Maintain manual emptying technologies.

UNIT A1.1: CHECKING THE OSS SYSTEM BUILDING FOR STRUCTURAL PROBLEMS
UNIT DURATION: 10HOURS CREDITS: 1.0

Specific Learning Outcomes	Learning Activities	Assessment Criteria	Assessment Method	Conditions
1.1.1 Describe on-site sanitation and faecal sludge management	• Definition of key terms ○ Sanitation ○ Faecal sludge management ○ Off-site sanitation system	• On-site sanitation and faecal sludge management described correctly	• Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes

	○ On-site sanitation systems ○ Faecal sludge ○ Emptying of faecal sludge ○ Faecal sludge management service chain ○ Dry OSS system ○ Waterborne OSS system			• Learning aids
1.1.2 Discuss attributes of a safe work place and structure weaknesses	• Composition of OSS systems ○ Super structure ○ Substructure • Structure weakness	• Attributes of safe work place including causes of structure weaknesses discussed correctly	• Class exercises • Assignments • Test • Final examination	• The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/practical
1.1.3 Check the OSS system building for structural problems	• Structural problems associated with the units of the superstructure, i.e. floor, masonry building walls, trusses, and roofing • Structural problems associated with the substructure, i.e. plinth, slab, foundation, and containment facility	• Process for checking OSS system building structural problems described correctly	• Assignments • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/practical
UNIT A1.2: OPERATING MANUAL ON SITE SANITATION EMPTYING TECHNOLOGIES UNIT DURATION: 10 HOURS CREDITS: 1.0				
1.2.1 Discuss emptying technologies for	• Technologies used in emptying OSS systems	• OSS system emptying	• Assignments • Class exercises	The trainee must have access to:

	OSS systems	○ Manual ○ Semi-mechanised ○ Fully mechanised • Factors influencing the choice of technology to use ○ Type of OSS system ○ Accessibility ○ Emptying equipment availability ○ Levels of expertise	technologies discussed correctly	• Test • Final examination	• Hand-out / Lecturer's notes • Learning aids • Field work/ practical
1.2.2	Discuss manual emptying technologies	• Manual emptying technologies ○ Direct lift ○ Cartridge containment system ○ Modified garden tools	• Manual emptying technologies discussed correctly	• Assignment • Class exercises • Practical • Test • Final examination	The trainee must have access to: • Hand-out / Lecturer's notes • Learning aids • Field work/practical
1.2.3	Discuss semi-mechanised (manually operated mechanical Faecal Sludge collection) emptying technologies	• Semi-mechanised (manually operated mechanical faecal sludge collection) emptying technologies ○ GulpMAPET	• Semi-mechanised manually operated mechanical FS collection discussed correctly	• Assignment • Class exercises • Practical • Test • Final examination	The trainee must have access to: • Hand-out / Lecturer's notes • Learning aids • Field work/practical
1.2.4	Discuss fully mechanised	• Fully mechanised FS	• Fully mechanised	• Assignment	The trainee must have access to:

Faecal Sludge emptying technologies	emptying technologies ○ eVac ○ Flexcrevator	FS emptying technologies discussed correctly	• Class exercises • Practical • Test • Final examination	• Hand-out / Lecturer's notes • Learning aids • Field work/practical
UNIT A1.3: EMPTYING ON-SITE SANITATION (OSS) SYSTEMS IN A SAFE AND HYGIENIC MANNER **UNIT DURATION: 10 HOURS**		**CREDITS: 1.0**		
1.3.1 Discuss manual emptying of OSS system using modified garden tools	• Applicability of modified garden tools • Parts and components of modified garden tools • Manual emptying process ○ Disinfection of the OSS system ○ Digging the side of the substructure ○ Breaking open the substructure ○ Scooping the faecal sludge ○ Containing faecal sludge	• Safe and Hygienic manual emptying of OSS system using modified garden tools discussed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Modified garden tools • Field work/practical
1.3.2 Discuss manual emptying of OSS system using gulper in a safe and hygienic manner	• Applicability of gulper • Parts and components of gulper • Gulper emptying process ○ Disinfection of the OSS system	• Safe and Hygienic manual emptying of OSS system using gulper discussed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Gulper • Field

	○ 'Fishing' out the solid waste ○ Fluidizing the faecal sludge ○ Setting up the gulper onto the drop hole ○ Pump out the faecal sludge into containers			work/practical
1.3.3 Describe manual emptying of OSS system using eVac in a safe and hygienic manner	• Applicability of eVac • Parts and components of eVac • eVac emptying process ○ Disinfection of the OSS system ○ 'Fishing' out the solid waste ○ Fluidizing the faecal sludge ○ Setting up the eVac onto the drop hole ○ Pump out the faecal sludge into containers	• Safe and Hygienic manual emptying of OSS system using eVac discussed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • eVac • Field work/practical
1.3.4 Discuss manual emptying OSS system using Flexcrevator in a safe and hygienic manner	• Applicability of Flexcrevator • Parts and components of Flexcrevator • Frexcrevator emptying process	• Safe and Hygienic manual emptying of OSS system using Flexcrevator discussed	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Flexcrevator

	○ Disinfection of the OSS system ○ 'Fishing' out the solid waste ○ Fluidizing the faecal sludge ○ Setting up the Flexcrevator onto the drop hole ○ Pump out the faecal sludge into containers	correctly		• Field work/practical
1.3.5 Explain occupational health and safety in relation to manual emptying of OSS facilities	• Hazard nature of faecal sludge • Personal hygiene • Proper use of PPEs • Physical hazards • Working in confined spaces • Lifting heavy loads	• Occupational health and safety issues explained correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • PPEs • Field work/practical
UNIT A1.4: CARRYING OUT HOUSEKEEPING **UNIT DURATION: 10 HOURS** **CREDITS: 1.0**				
1.4.1 Describe faecal sludge spillage clean-up process	• Containing spillages during manual pit emptying ○ Cleaning up of faecal sludge spillages ○ Use of spillage kits ○ Hydrated lime as a medium for the spillage kit	• Faecal sludge spillage clean-up process described correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Spillage kits • Field work/practical

1.4.2 Discuss disinfectants and disinfection processes	• Process of disinfection and disinfecting the work space ○ Disinfectants ○ Antiseptic products ○ Preparation of the disinfectant	• Disinfectants and disinfection processes discussed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Disinfection products • Field work/practical
1.4.3 Explain restoration works on building structure	• Factors of influence for restoration works ○ User behaviour ○ Manual emptying technology used ○ OSS system type • Masonry skills	• Restoration works on building structures explained correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Trowel • Sand • Cement • Bricks/ concrete blocks
1.4.4 Perform final inspection post-emptying the OSS facility	• Condition of the system post-emptying ○ State of the OSS structure, i.e. super- and sub-structure ○ State of work environment ○ Extent of disinfection ○ FS removal, i.e. partial or full	• Final post-emptying inspection of OSS facility performed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Trowel • Sand • Cement • Bricks/ concrete

				blocks • Field work/practical
UNIT A1.5: CARRYING OUT DATA COLLECTION **UNIT DURATION: 20 HOURS** **CREDITS: 20**				
1.5.1 Describe data sets and types of OSS facility	• Data sets and types ○ Location, i.e. space and time ○ Faecal sludge volume ○ OSS system type ○ Number of user ○ Date previously emptied • Data as a management tool ○ Collection frequency ○ User behaviour ○ Effectiveness of service	• Types of data from OSS facility described correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • GPS • Data collection form • Field work/ practical
1.5.2 Discuss the use of Gadgets (GPS and smart phone) for positioning (location data)	• How to use the GPS and smart for locations (location data – longitudes and latitudes) ○ Handheld GPS ○ Smart phone • Data logging and recording	• The use of GPS and smart phones for location data is discussed correctly	• Assignments • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Handheld GPS • Smart phone • Field work/practical
1.5.3 Discuss methods for measuring faecal sludge	• Measurements of volumes ○ Volume ○ Unit measure of volume	• Methods of measuring faecal sludge volumes	• Practical • Class exercises • Test	The trainee must have access to: • Hand-out/

	○ Volume of container • Standardized containers ○ Number of containers used	discussed correctly	• Final examination	Lecturer's notes • Learning aids • Container • Field work/practical
1.5.4 Explain methods for quantifying OSS facility type and use	• Identification of OSS facility type ○ Wet OSS facility ○ Dry OSS facility ○ Lined and sealed ○ Unlined and unsealed • OSS facility users quantified • OSS facility user behaviour classified ○ Quantity of solid waste ○ Poor ○ Good • Service level ○ Service frequency ○ Date previous service provided	• Methods of quantifying OSS facility type and use explained correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • OSS facility • Field work/ practical
1.5.5 Explain methods for reporting collected data	• Data reporting ○ Data collection form ○ Questions ○ Observations guides	• Methods of data collection explained correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids

				• Data collection form • Field work/ practical
1.5.6 Discuss carting and/ or transporting FS	• Transporting to the transfer station ○ Transport options • Transportation to the treatment facility ○ Transport options	• Transportation of faecal sludge discussed correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Data collection form • Field work/ practical
UNIT A1.6: PERFORMING PREVENTIVE MAINTENANCE ON MANUAL EMPTYING TOOLS AND EQUIPMENT **UNIT DURATION: 20 HOURS CREDIT: 2.0**				
1.6.1 Describe the components of manual emptying tools and equipment	• Review the different components of manual emptying tools and equipment ○ Modified garden tools ○ Gulper ○ eVac ○ Flexcrevator ○ Mobile disludging unit • Assemble and disassemble manual emptying tools and equipment into respective	• The different components of manual emptying tools and equipment described correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Manual emptying tools and equipment • Spanners • Field work/

	units of the system			practical
1.6.2 Plan the cleaning and disinfection of manual emptying tools and equipment	• Cleaning and disinfecting modified garden tools ○ Scoop ○ Fishing tool ○ Pick ○ Spade ○ Folk • Cleaning and disinfecting the eVac ○ Pump assembly ○ Vacuum hose ○ Vacuum cylinder/ tank • Cleaning and disinfecting the flexcrevator ○ Pump assembly ○ Vacuum hose ○ Vacuum cube ○ Trash excluder • Cleaning and disinfecting the mobile disludging unit	• Respective units of manual emptying tools and equipment properly cleaned and disinfected	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Manual emptying equipment • Spanners • Water • Disinfectant • Field work/ practical
1.6.3 Assess the operations of manual emptying tools and equipment	• Test-running the operations of manual emptying tools and equipment ○ Electric controls ○ Motor ○ Vacuum pump/ pump vane	• Operation of manual emptying tools and equipment assessed correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids

	○ Pressure gauge ○ Vacuum gauge ○ Vacuum lid ○ Vacuum cylinder ○ Vacuum cube ○ Trash excluder ○ Modified garden tools			• Manual emptying tools and equipment • Spanners • Field work/ practical • Oil/ vacuum pump consumables
1.6.4 Plan the repairs works of manual emptying tools and equipment	• Repairing damaged/ malfunctioning units of manual emptying tools and equipment	• Repair works of manual emptying tools and equipment are in good working order and operating correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • tools and equipment • Spanners • Oil/ vacuum pump consumables • Field work/practical

MODULE: 404-02-A BASIC COMMUNICATION SKILLS IN FAECAL SLUDGE MANAGEGEMENT	
Nominal Duration: 40 Hours	**Credits: 4.0**
Learning Outcomes:	

On completion of this module, trainee will be able to:

1. Communicate effectively
2. Provide customer services
3. Communicate good user practices for On Site Sanitation systems
4. Communicate findings and any identified issues to users
5. Provide customer aftercare service

Specific Learning Outcomes	Learning Activities	Assessment Criteria	Assessment Methods	Conditions
Unit A2.1: Communicating effectively **Unit Duration: 5 Hours**				**Credits: 0.5**
2.1.1 Discuss the importance and process of communication	• Definition and types of communication ○ Spoken/ Verbal ○ Non-verbal ○ Written ○ Visualization • Communication process ○ Sender ○ Channel ○ Receiver ○ Encode/ Decode	• The importance and process of communication discussed correctly	• Assignment • Class exercises • Test • Final examination • Role play	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
2.1.2 Explain the listening skills	• Importance of Active listening ○ Pay attention ○ Show that you are listening	• Listening skills understood and applied correctly	• Assignment • Class exercises • Test	The trainee must have access to: • Hand-out/

	○ Provide feedback ○ Defer judgement ○ Respond appropriately		• Final examination • Role play	Lecturer's notes • Learning aids
2.1.3 Explain telephone etiquettes	• Making a call • Answering a call	• Telephone etiquettes explained correctly	• Assignment • Role play • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
2.1.4 Discuss face to face communication	• Definition of face to face communication • Types of face to face communication • Principles of effective face to face communication ○ Smile ○ Maintain eye contact ○ Pause ○ Ask questions	• Face to face communication discussed correctly	• Assignment • Role play • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
UNIT A2.2: PROVIDING CUSTOMER SERVICE **UNIT DURATION: 10 HOURS** **CREDITS: 1.0**				
2.2.1 Discuss material requirements and cost of faecal sludge emptying service	• OSS emptying services • Cost of faecal sludge emptying services ○ Band 1 ○ Band 2	• Material requirements and cost of FS emptying services discussed	• Assignment • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes

	○ Band 3 • Materials/ customer contribution ○ Water ○ Cement ○ Bricks/ concrete blocks ○ Sand	correctly		• Learning aids • Field work/ practical
2.2.2 Explain payment process for faecal sludge emptying services	• Payment process for faecal sludge emptying services ○ Opening of work order/ job card ○ Identification of Band of interest and payment ○ Issuance of invoice and receipt (in triplicate)	• Payment process for faecal sludge services explained correctly	• Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
2.2.3 Describe general financial paper trailing and internal control	• Importance of a financial paper trail ○ Job card and invoicing ○ Payment and receipting • Internal controls ○ Access to enter information ○ Access to use information ○ Receipting cash • Disbursing cash	• General financial paper trail and internal controls described correctly	• Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
UNIT A2.3: COMMUNICATING GOOD USER PRACTICES **UNIT DURATION: 10 HOURS CREDITS: 1.0**				

2.3.1 Discuss user behaviour practices	• User habits of OSS facilities ○ Cleanliness ○ Poor user behaviour ○ Good user behaviour	• User behaviour practices correctly discussed	• Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids
2.3.2 Explain good hygiene practices	• Poor hygiene practices and disease • Understanding pathogen transmission routes ○ F-diagram ○ Primary and secondary barriers • Hand washing as the first line of defence ○ When to wash hands ○ Washing-hands the right way	• Good hygiene practices explained correctly	• Demonstrations • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/ practical
2.3.3 Discuss minimum requirements for appropriate and adequate toilet	• Key indicators ○ Provide a degree of privacy ○ Easy to use and clean ○ Minimum of flies and mosquito breeding ○ Provision of disludging mechanisms	• Minimum requirements for appropriate and adequate toilet discussed correctly	• Demonstration • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/ practical

	○ Provision of hand washing facility • Reduction of environmental health risks			
2.3.4 Explain vector control mechanisms	• Definition of vector ○ Linkage of vector to OSS systems ○ Nature of vector borne disease ○ Vector and disease • Vector control ○ Environmental ○ Chemical	• Vector control mechanisms explained correctly	• Interactive lecture • Class exercises • Test • Final examination •	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/ practical
2.3.5 Discuss solid waste management	• Defining solid waste and solid waste management ○ Solid waste types ○ Collection and disposal ○ Vector and solid waste • Solid waste and hygiene ○ Access to refuse containers ○ Removal frequency ○ Safe disposal	• Solid waste management discussed correctly	• Assignment • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Field work/ practical
UNIT A2.4: COMMUNICATING FINDINGS, IDENTIFIED ISSUES AND PROVIDING CUSTOMER AFTERCARE SERVICES UNIT DURATION: 10 HOURS CREDITS: 1.0				
2.4.1 Explain report	• Key contents of the report	• Report format	• Assignment	The trainee must

preparation and format	○ OSS type (Dry or Wet) ○ Users (No. of HHs/ HH members) ○ General structure integrity (Good or Poor) ○ Volume of FS collected (No. of barrels) ○ Record of previous emptying ○ Contact details (Name, phone, plot number, GPS coordinates) ○ Service satisfaction (Yes or No) ○ Solid waste content (Estimated quantity, number of barrels) ○ Any other issues identified	and preparation explained correctly	• Class exercises • Test • Final examination	have access to: • Hand-out/ Lecturer's notes • Learning aids • Data collection form • Field work/ practical
2.4.2 Describe different ways of reporting	• Reporting ○ Oral ○ Written • Difference between oral and written report ○ Feedback ○ Contribution to permanent records	• Different ways of reporting described correctly	• Assignment • Practical • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Data collection form

	○ Accuracy and precision ○ Professional value			• Field practical
2.4.3 Discuss customer aftercare	• Definition of customer aftercare ○ Steps involved in effective customer aftercare ○ Share of customer ○ Lifetime value • Care for OSS systems • Feedback on services provided	• Customer aftercare discussed correctly	• Assignment • Class exercises • Test • Final examination	The trainee must have access to: • Hand-out/ Lecturer's notes • Learning aids • Data collection form

MODULE 404-03-A ENTREPRENEURSHIP
MODULE PURPOSE: To equip trainees with knowledge, skills and appropriate attitudes to own and manage a viable business enterprise.

Job Profile

Part A

Job Title: On-site sanitation pit emptier **TEVETA Code**:.....

CSO Occupational Std. Code, if any: .....

Target Curriculum and Qualification:

Skills award in manual emptying of on-site sanitation facilities

Economic sectors in which the job is mainly practised:

a) (Water and) sanitation
b) Health
c) Environment
d) Agriculture
e) Education
f) Commerce and industry

Part B:

1.0 Job Purpose

To perform manual emptying of on-site sanitation facilities, as scheduled and/ or demanded, in a safe and hygienic manner; and safely contained in readiness for collection and transportation to the faecal sludge treatment facility.

2.0 Main Duties/ Responsibilities of On-site Sanitation Pit Emptier

2.1 Safeguards work place safety

2.1.1 Examine OSS facility structure, both the superstructure and substructure, carefully;

2.1.2 Identify any cracks and/ or weaknesses to the OSS facility structure;

2.1.3 Establish the status and soundness of the OSS facility structure for manual emptying, and

2.1.4 Decide on whether or not to proceed with manual emptying at the OSS facility.

2.2 Selects method to use to empty OSS containment facility

2.2.1 Establish whether the OSS facility is a dry or wet facility;

2.2.2 Establish the thickness of the faecal sludge;

2.2.3 Establish whether the substructure is lined or not;

2.2.4 Determine user behaviour of the OSS facility;

2.2.5 Empty the on-site sanitation facility using appropriate manual pit emptying technology

2.3 Conducts manual emptying of the OSS containment facility

2.3.1 Use appropriate PPEs;

2.3.2 Conducts disinfection of OSS containment facility before commencement of manual emptying;

2.3.3 Maintains no direct contact with faecal sludge;

2.3.4 Prevents spillage of faecal sludge;

2.3.5 Secures faecal sludge in ***'suitable containers'***[1] prior to their collection, and

2.3.6 Loads ***'suitable containers'*** onto transport vehicle.

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[1] ***Emptied faecal sludge will be secured in a suitable container that is equipped with a closure, preferably a screw type closure. Such a container should have gross weight of not more than 60 kg to enable easy lifting. When full, a screw closure will be tightly locked into place and the container carried and hoisted into a waiting transport system to transporting to the FSTF. Each container will be carried to the waiting transport system by 2No. OSS Pit Emptier.***

2.4 Conducts clean-up, disinfection and restoration works on the OSS facility

2.4.1 Cleans up all spillages that may have occurred during the process of emptying OSS containment facilities;

2.4.2 Conducts disinfection of OSS facility and the affected immediate surrounding environment, i.e. area where spillage had occurred, and

2.4.3 Effects restoration works on the substructure (especially if modified garden tools was the emptying technology used).

2.4.4 Transport FS to suitable location

2.5 Collects data on the emptied OSS facility

2.5.1 Record GPS coordinates of the emptied OSS facility;

2.5.2 Note and record volume of faecal sludge emptied from the OSS facility;

2.5.3 Note and record OSS type, i.e. wet or dry;

2.5.4 Obtain and record number of users for OSS facility;

2.5.5 Note and record user behaviour, and

2.5.6 Obtain and record information on the last date of emptying the OSS facility

2.6 Perform preventive maintenance on manual emptying tools and equipment

2.6.1 Clean manual pit emptying tools and equipment

2.6.2 Check operations of manual emptying tools and equipment

2.6.3 Check operations of containers

2.6.4 Repair any damaged/ malfunctioning parts and/ or units of manual emptying tools and equipment

2.7 Interface with user and provide aftercare service

2.7.1 Advise customers on requirements and payment for services

2.7.2 Negotiate with customers on the cost of services

2.7.3 Receive and record payments in accordance with company policies and procedures

2.7.4 Communicate good user practices for OSS systems

2.7.5

3.0 Equipment/ Tools and Consumable Materials

3.1 Equipment/ Tools

3.1.1 Modified garden tools, i.e.: solid waste hooking tool; faecal sludge scooping tool; digging pick; trowel, and spade;

3.1.2 Containers with lids;

3.1.3 Manual mechanised emptying equipment, i.e. Gulper, eVac, Flexavator;

3.1.4 GPS;

3.1.5 Personal Protective Equipment (PPE), i.e.: Heavy duty protective gloves; chemical resistant overall; chemical resistant coverall; gum boots; hard hat, and respirators;

3.1.6 Bucket, and

3.1.7 Van/ light truck to transport OSS Pit Emptier.

3.2 Consumables

3.2.1 Data collection form;

3.2.2 Disinfectant, and;

3.2.3 Soap and/ or detergent.

4.0 Quality of Process and Service

4.1 Quality of process

4.1.1 Locate and survey the route and OSS facility to be emptied prior to service provision;

4.1.2 Establish contact with OSS facility users and communicate responsibilities (including date for service provision);

4.1.3 Use correct manual emptying tools;

4.1.4 Adhere to data collection form, and

4.1.5 Communicate good user practices.

4.2 Quality of process

4.2.1 Conducts manual emptying of OSS facility in full PPE gear;

4.2.2 Accomplishes manual emptying of OSS facility with minimum spillages of faecal sludge;

4.2.3 Conducts disinfection of OSS facility and the affected immediate surrounding environment, i.e. area where spillage had occurred;

4.2.4 Effects restoration works on the substructure (especially if modified garden tools was the emptying technology used);

4.2.5 Gathers and records data of emptied OSS facility (as per prescribed data collection form), and

4.2.6 Communicates good user practices.

5.0 Dilemmas/ Challenges and Complexities for the Job Holder (What are the Complicating Issues for Effective Performance?)

5.1 Dilemmas/ challenges and complexities

5.1.1 Absence of OSS and FSM regulations;

5.1.2 Absence of faecal sludge treatment facilities (FSTF);

5.1.3 Weak structural strength of OSS facilities;

5.1.4 Bad user behaviour;

5.1.5 Cultural/ social exclusion of OSS Pit Emptier;

5.1.6 Lack of dedicated transport for OSS Pit Emptier;

5.1.7 Absence of standardized OSS containment facilities;

5.1.8 Absence of appropriate PPEs;

5.1.9 Direct contact with faecal sludge by OSS Pit Emptier, and

5.1.10 Informality nature of the sector.

5.2 Alternative choices (solutions) to dilemmas/ challenges and complexities

5.2.1 Enact OSS and FSM Bye-laws;

5.2.2 Construct faecal sludge treatment facilities (FSTF);

5.2.3 Examine OSS facility and ensure it is safe for manual emptying;

5.2.4 Conduct IEC and promote behavioural change interventions;

5.2.5 Provide dedicated transport for OSS Pit Emptier;

5.2.6 Schedule routine medical examinations for OSS Pit Emptier, and

5.2.7 Develop OSH plan and schedule regular training.

6.0 Parties Involved/ Interacting with the Job Holder

6.1 Internal

6.1.1 Peri Urban Unit (LWSC)

6.1.2 Sewerage (LWSC)

6.1.3 Water Trusts

6.1.4 OSS Pit Emptier

6.2 External

6.2.1 Public health inspectors (LCC, MoH)

6.2.2 NWASCO inspectors

6.2.3 Medical personnel (health institutions)

6.2.4 Water Sanitation for the Urban Poor (WSUP)

6.2.5 ZEMA inspectors

7.0 Working Conditions/ Environment

7.1 Odorous

7.2 Confined spaces

7.3 Weak structural integrity of building structures

8.0 Physical Demand of Work on the Body

8.1 Physically demanding

8.2 Work may be performed in confined spaces

8.3 Work may be performed in unpleasant and hazardous conditions

8.4 All work will be performed outside office setup

8.5 Will work for six days a week

9.0 Required Abilities for Job Holder

Job holder should be able to:

9.1 Use all manual emptying technologies employed by the provider.

9.2 Advise users on good OSS user behaviour.

9.3 Complete data collection form accurately.

9.4 Examine OSS structure for any structural weaknesses.

9.5 Conform to OSH requirements and be OSH conscious.

9.6 Think logically.

9.7 Learn and apply acquired knowledge as work demands.

10.0 Required Knowledge/ Skills for job holder

10.1 Basic reading and writing skills.

10.2 Basic understanding of simple machine mechanisms.

10.3 Team work skills, i.e. communication, supportive, problem solving and conflict management.

10.4 Reasoning skills.

10.5 Learning skills.

10.6 Physical skills.

10.7 Good interpersonal skills.

11.0 Important Values/ Attitudes

11.1 Good work ethics.

11.2 Team worker (team spirit).

11.3 Self-motivated.

11.4 Reliable.

11.5 Hard working.

11.6 Honest (Trustworthiness).

11.7 Self-managed.

11.8 Proactive.

11.9 Resourcefulness.

12.0 Practicing Licence Requirements (if any)

12.1 None

13.0 Employment Patterns

13.1 Salaried employment career pathway (OSS Pit Emptier could progress to):

13.1.1 None

13.2 Entrepreneur/ Self-employed career pathway

13.2.1 Provide manual FS emptying services as a sole business entrepreneur

13.2.2 Associate with others and provide manual FS emptying services as business

13.3 National Employment Outlook and related Policy/Investment Trends

13.4 Salaried employment career pathway

13.4.1 National Water Supply, Sanitation and Solid Waste Management Policy (Draft 2016)

13.4.2 Vision 2030

13.4.3 Seventh National Development Plan

13.4.4 National Urban and Peri Urban Sanitation Strategy (2015-2030)

13.4.5 Urban OSS and FSM Framework

13.4.6 Public Health Act

13.4.7 Environmental Management Act No.: 12 of 2011

13.4.8 Lusaka City Council On-site Sanitation Bye-law (Draft 2018)

13.4.9 Sustainable Development Goals (SDGs)

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