Cesspool Truck Maintenance Standard Operating Procedures (CTMSOP) for fecal sludge management entrepreneurs (FSMEs)

1. Purpose of CTMSOPs

Transportation plays a key part in the emptying service provision such that the condition of the vehicle (truck) is essential to the success of the business model. That is why it is imperative that cesspool truck fleets be properly maintained. This document is designed to standardize the procedures for cesspool truck maintenance, and ensure that the FSME's obtain maximum utilization of their vehicles at all times to achieve business profitability.

These practices are designed to help prevent breakdowns from occurring, minimize down time required to make repairs, and ensure that the vehicle is operating safely. A total maintenance program must be proactive and reactive, with the aim of minimizing problems before they occur. This is commonly achieved through:

- A daily maintenance checklist
- Regular or scheduled preventive maintenance

However, there will be times when unscheduled repairs may be necessary.

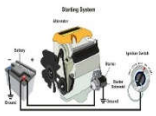
2. Checklist of Pre- Trip Inspection of the Cesspool Truck by the Driver

An effective preventive maintenance program must include checklists that identify what is to be serviced and how frequently that service should be performed. The condition of the vehicle is the responsibility of the driver of the vehicle.

For FSMEs who do not drive their own trucks, ensure that the contracted drivers possess the right and up to date class of driver's license. Trucks especially cesspool require experience and a higher skill level to drive them successfully.

The driver should inspect the vehicle before going on the road. The maintenance checklist pre-trip check includes:

Part	Checklist	Do's and Don'ts	NOTE
 **Tyres**	• Check to see there are no lumps, bumps, or cracks in the tyres • Check to see that that there is sufficient air pressure in the tyres • Check to see that the tyre tread is not worn out, or that there is no uneven wear and tear	✓ If any of the points in the checklist are not met, rectify the issue before going on a job × Do not drive long distances if tyres need replacement × Do not purchase second hand tyres × Do not re-tread tyres	• Given that Cesspool trucks carry Feacal sludge which is heavy in weight hence impacting the pressure, this check needs to be conducted on a regular basis.

Part	Checklist	Do's and Don'ts	NOTE
 **Lubricant**	• Look for fluid leakage on the ground under the truck • Check to see if the coolant, hydraulic, oil and fuel are leaking • Check if there is the proper amount of engine oil, coolant etc. • Turn on the ignition and examine the oil pressure, temperature and air pressure gauges to assure they are working properly	✓ If the lubricant levels are low, or if there is a leakage, rectify the issue before going on a job × Do not drive long distances if the fluid is leaking or if the fluid levels are low	• Look out for manufacturer seal on the lubricant packaging to avoid using counterfeit lubricants which will have a negative impact on the performance of the truck
 **Electrical system and wiring**	• Check that all lights including headlights, warning lights, flashers, clearance lights, turn signals, brake lights and other electrical components are functioning • Check wires to ensure that they are not loose or worn out	✓ If any lights are not functioning, have them fixed before going on a job × Do not drive with non-functioning lights as it may result in an accident, or you may be penalized	• Ensure that you are engaging a mechanical expert in this field as the truck's Electrical system and wiring are very delicate.
 **Brakes**	• Check that the brakes are not making a noise when applied, and that the vehicle is not taking longer than usual to stop • Check the brake pads to assure that there is adequate lining remaining • Check that there are no leaks in the air pressure system. If air pressure is low, check if the warning alarm is accurately displaying the same • Check if parking brakes turn on automatically	✓ If the brakes are not performing as expected, of if the lining has worn out, get the brakes serviced before going on a job × Do not drive long distances if the brakes are not functioning as they should	• Procure brake pads only from authorized dealers at all times.

Part	Checklist	Do's and Don'ts	NOTE
 **Fuel**	• Check that the vehicle has a dipstick to measure the fuel level • Check the fuel level visually using the dipstick and ensure you have sufficient fuel for the job	✓ If possible, enter into an agreement with a local fuel station wherein they maintain an account to enable fuel purchase on credit × Do not run vehicle on very low fuel levels. Keep minimum fuel for 3kms (based on your vehicle mileage) at all times	• Ensure that the Cesspool truck is fueled from trusted petrol station brands to avoid adulterated fuels which will damage the truck engine.
 **Chassis/ flat bed**	• Inspect chassis to see if there are any cracks or rusting.	✓ If chassis is damaged, have it rectified immediately × Do not drive long distances, or fill the tank if the chassis is damaged	• This can be done at least once a month.
 **Air tank**	• Drain air tanks daily to ensure no water is present inside, as liquids trapped in an air brake system can rot the lines from the inside out and cause deadly malfunctions	✓ If the pump takes >1 hour to pump sludge; get air tank serviced immediately	• This would require a specialist mechanic.
 **Suction pipe**	• Before the job, check that there are no holes/ cracks in the suction pipe • During the job, ensure that there are no leaks in the suction pipe	✓ Disconnect the pipe from both sides after dumping × Do not allow other vehicles to drive over the pipe; place a "Danger" floor sign near the hose to warn other vehicles	• These should be well maintained to avoid spillages in the community.
 **Suction pump**	• The suction pump is the life of a cesspool truck and oil contamination is one of the most common maintenance concerns. Over time, pump oil (hydraulic oil) can become oxidized or contaminated by vapors from the	✓ Replace the hydraulic oil every 40 trips or if the gauge reading is low; i.e., in the 'red zone' × Do not use the pump if the hydraulic oil levels are low as it will damage the pump	• The emptying team should pay special attention to this part.

Part	Checklist	Do's and Don'ts	NOTE
	process, resulting in reduced lubricity • Check oil levels every day to ensure that it is not below the prescribed level; i.e., it is not in the 'red zone' of the gauge		
 **Tank**	• Check the tank for rust	✓ If the tank is rusted, have it repaired before holes develop × Do not use the cesspool truck if there are holes in the tank	• This check can be conducted at least once a month.

3. Regular or scheduled preventive maintenance

Regular maintenance must be undertaken at fixed schedules (e.g., every 5,000km), irrespective of whether the vehicle is showing any problems. This helps prolong the life of the vehicle and rectify minor problems before they become major issues that require more time and money to rectify.

- **Cesspool Truck Servicing;**
  - The Truck should be serviced after every 5,000km:
    - Engine oil and oil filter should be replaced every servicing.
    - Fan belt should be replaced every second servicing; i.e., after 10,000km
    - Wheels should be aligned every servicing.
    - Brake fluid, coolant, and hydraulic oil should be checked every servicing and if levels are low these should be topped up.
    - The chassis should be inspected every servicing for signs of damage, and repairs should be made if damage is found.
    - The electrical system should be inspected every servicing, and repairs should be made if faults are found.
  - The suction Pump must be serviced after every 40 trips or when hydraulic oil is running low, whichever is earlier.
  - The FSME should ensure that the vehicle service log records are maintained to ensure consistency in servicing the truck