

## How to separate pit toilet organic waste from trash for use in the circular economy



More and more organisations are embracing the significant potential of the Circular Economy. This term describes the businesses and industry associated with the recycling or re-use of waste emanating from other processes.

Organic waste emanating from sanitation systems also has clear circular economy potential. Examples of this include:

- Beneficiation of faecal waste or treatment works sludge as a key component of compost
- Beneficiation of faecal waste or treatment works sludge as a key component of the Black Soldier Fly larvae processing approach for producing nutrients and oil

However, when removing faecal organic waste from pit toilets or other dry sanitation systems there are often huge challenges with trash (solid waste) that is disposed of by users into toilets. This happens because residents, especially in peri-urban or rural areas don't have a convenient solid waste removal service. In this case, the waste removed from pits is a mixture of valuable organic waste and trash with minimal value.

Khanyisa Projects have successfully developed an innovation, which safely and effectively removes the trash from the faecal organic matter or sludge so that it can be used by circular economy businesses to derive income.

The innovation known as the Sludge Trommel is a rotating cylindrical screen with different aperture sizes, speeds, and angles of operation. Khanyisa Projects, through a recent grant from the Wader fund of the Water Research Commission, successfully tested the screen using different types of pit toilet waste with extremely satisfying results including:

- It is capable of screening up to 15 tons of sludge per day
- Removal of trash from sludge comprising up to 40% trash to only 2%
- Electricity use of 2.6 kW/hr

Trash from pit toilets is a significant stumbling block for beneficiation of faecal sludge. The Sludge Trommel can remove this obstacle!