

The “Excrevator”

Safe and Effective Pit Emptying

- Tate Rogers
- North Carolina State University, USA



Motivation

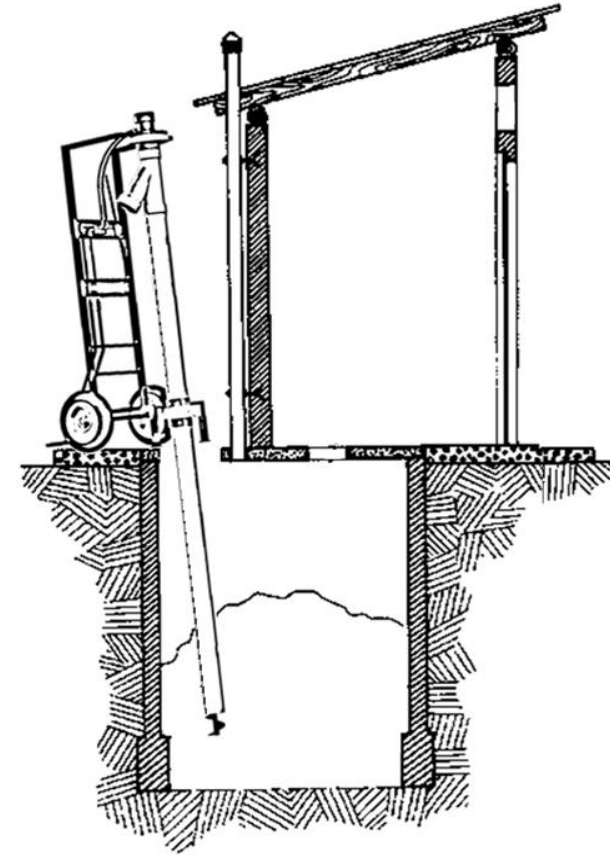
- Typical emptying methods are too expensive
- Access to the pits is difficult
- Pits are often emptied manually with shovels or buckets
- Undignified profession



The Exceerator



- Modified power auger
- Hydraulic motor powered by 11HP engine
- Forward/Reverse controls
- Dolly Frame for easy manoeuvring
- Detachable bottom section



Field Testing

Hyderabad, India

- Mostly septic tanks and leach pits
- High variability of sludge
- Minimal sludge in the bottom of tested pits.



Field Testing

Durban, South Africa

- **Mostly Dry VIP's**
- Large quantities of trash
- Manual emptying is an efficient enterprise



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Field Testing

Mzuzu, Malawi

- **Difficult access into pits**
- Significant trash present
- Promising results using the Excrevator
- Two units to be tested in early 2015



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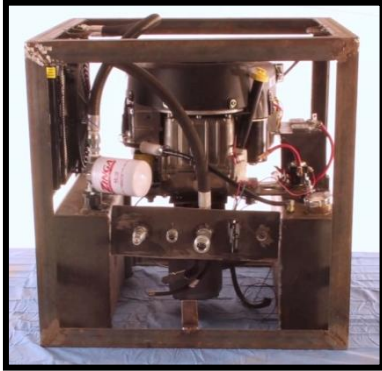
Laboratory Testing

- Testing of several inlet heads to handle trash
- Representative trash used for testing including:
 - Newspaper/magazines
 - Sponges
 - Plastic bags
 - Rope
- Vacuum assist testing



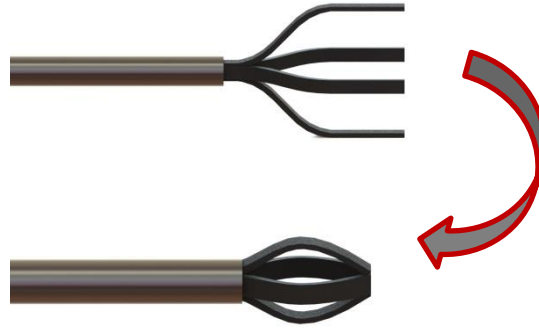
Pit Emptying Tool Box

Power Source

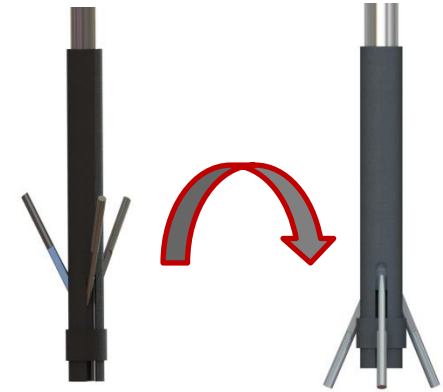


PowerCube 7

Manual Trash Removal



Claw



Hook

Mechanical Tools



Excavator



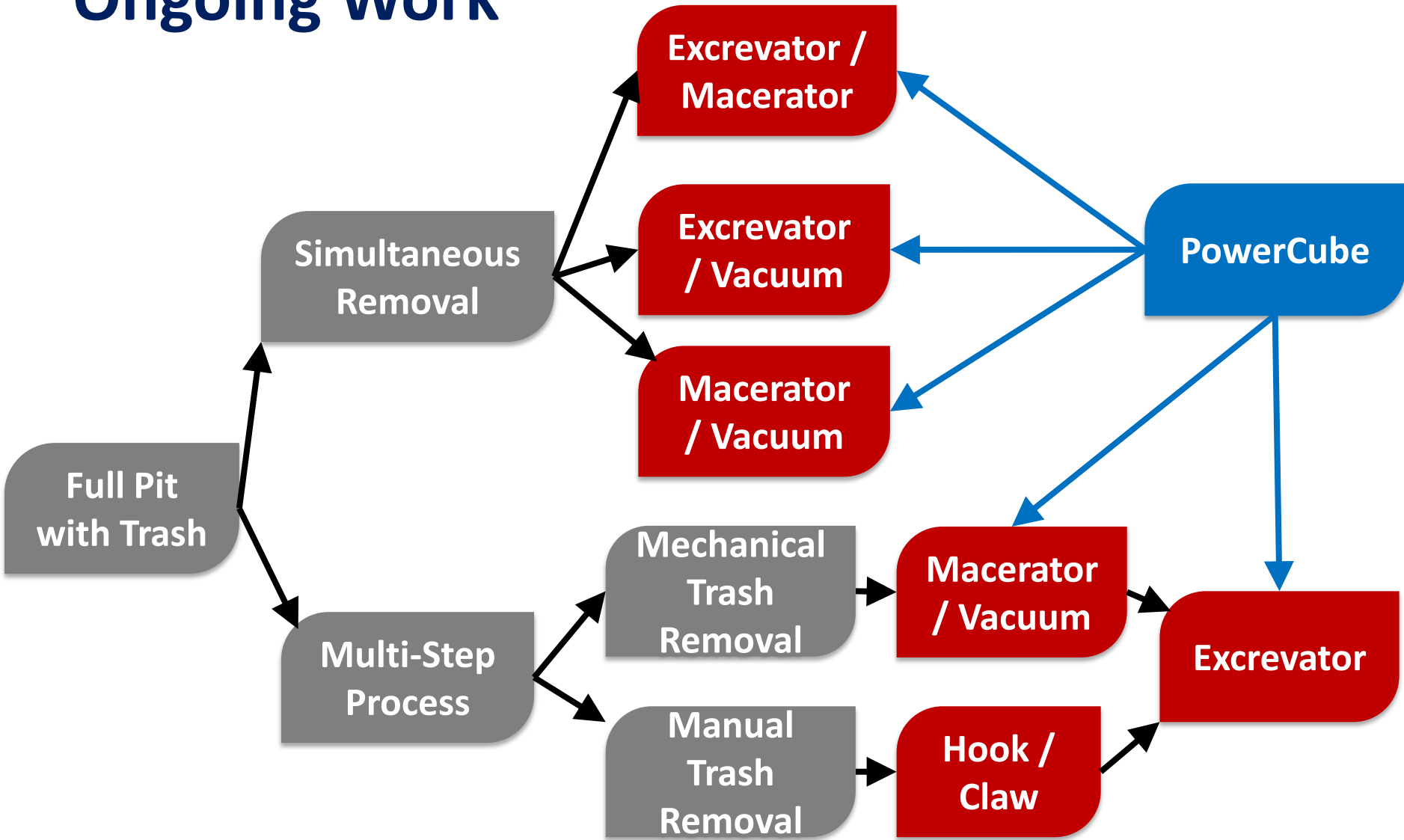
eVac System
Partners in Development, SA

Vacuum System



Macerator

Ongoing Work



Summary

- The Excavator is an effective pit emptying tool if trash content can be managed
- An assortment of tools are necessary to empty the high variability of existing pits
- Field testing to continue in Malawi in Early 2015
- New field testing locations to be determined

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