

## Case Study: Mdluli Safari Lodge

Off-grid Eco-Sustainable Wastewater Management.

### Overview

**Mdluli Safari Lodge, a beacon of community development and sustainable tourism, presents a model for luxury safari experiences in Kruger National Park.**

With a commitment to green practices, the lodge required an eco-friendly wastewater treatment system.

Calcamite delivered a tailored solution that processes up to 15 cubic meters per day, aligning with the lodge's green marketing initiatives and preserving the natural beauty of the Kruger National Park.

### Requirements/On-site challenges

Isolated from municipal sewage facilities, Mdluli Safari Lodge needed a reliable, self-sufficient wastewater treatment system that could handle the output from its guest accommodations, kitchen, and staff village with minimal visual impact.

### Solution

Calcamite implemented two comprehensive WWTPs, featuring septic tanks and Bio-reactors equipped with fixed film media for effective biomass attachment.

The aeration within these Bio-reactors enables aerobic bacteria to digest organic waste efficiently. The system concludes with a chlorination process, ensuring the treated water is pathogen-free and safe for irrigational reuse.

### Client information

Mdluli Safari Lodge, situated within a stone's throw from Numbi Gate, offers an exquisite, environmentally-conscious retreat for visitors to the Kruger National Park.

With sustainability at its heart, the lodge is a testament to luxury and conservation co-existing harmoniously.



#### Location

Kruger National Park, South Africa



#### Industry

Game Lodge



#### Two plant sizes:

Plant 1: 5kL per day  
Plant 2: 10kL per day



#### Project date

Commissioning: 08 Aug 2019  
Installation: 08 Nov 2019

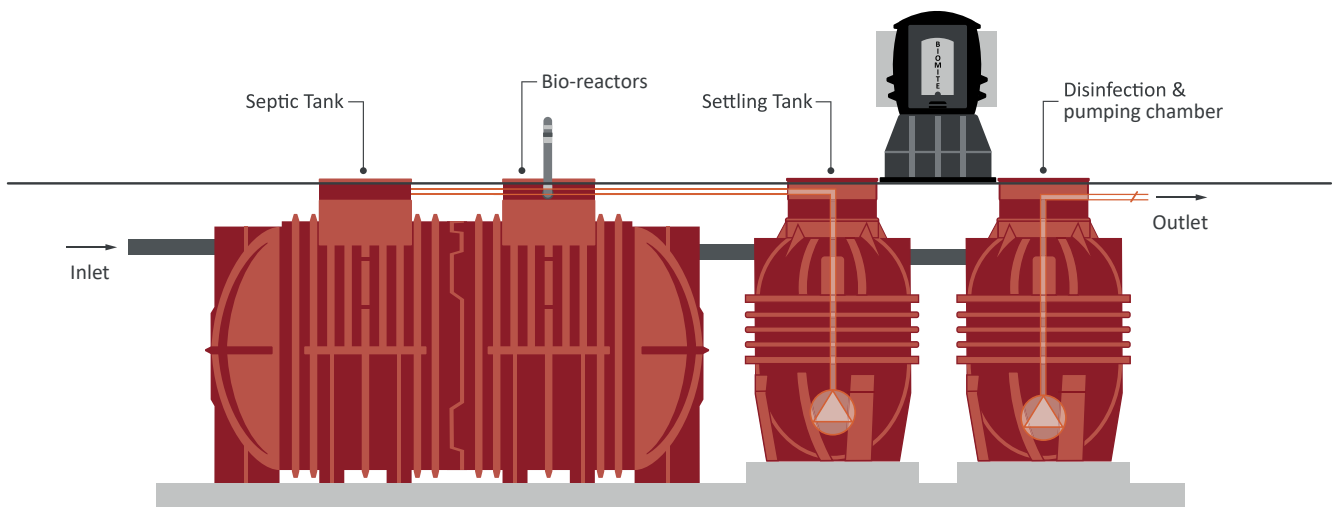
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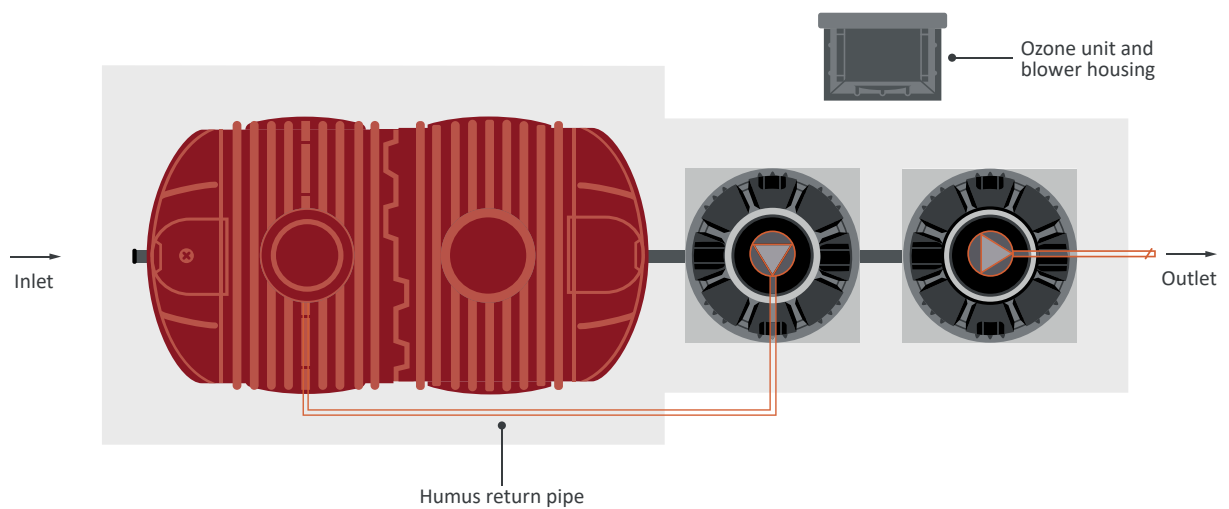
### 1st Plant specifications

Side view

ADWF: 5m<sup>3</sup>/day  
Plant type: Below ground



Top view



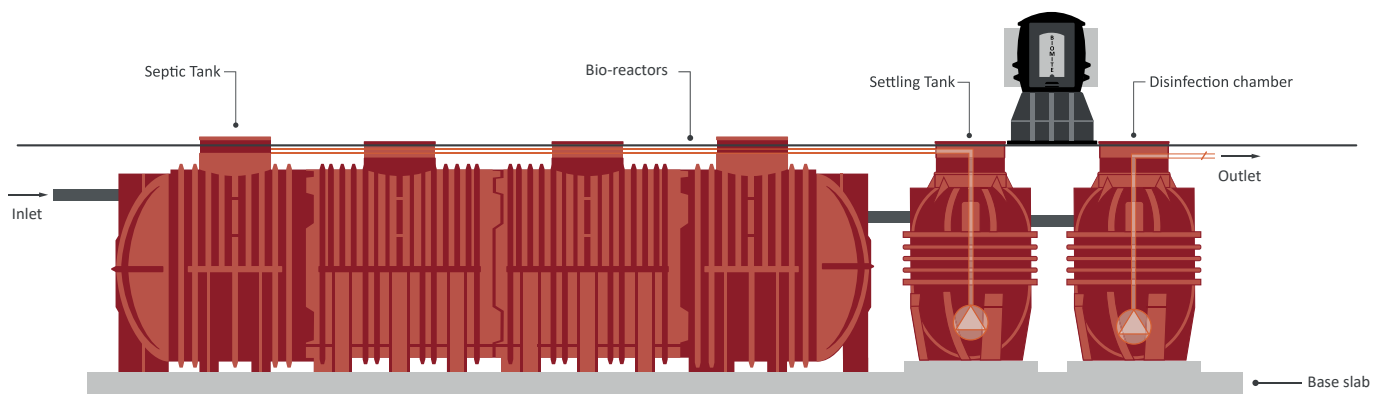
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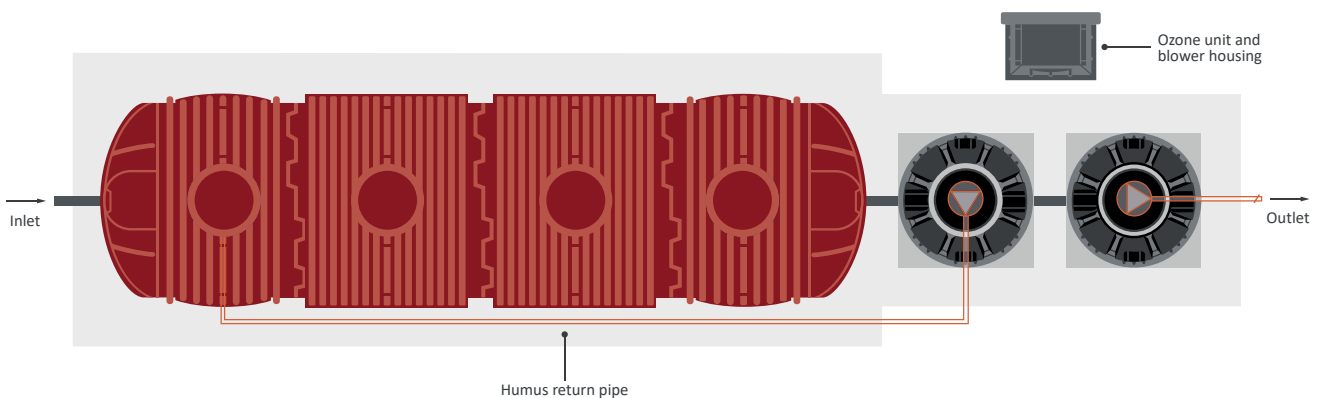
### 2nd Plant specifications

Side view

ADWF: 10m<sup>3</sup>/day  
Plant type: Below ground



Top view



### Conclusion

Mdluli Safari Lodge's collaboration with Calcamite represents a paradigm of eco-tourism excellence, where luxury meets sustainability. The advanced wastewater treatment systems provided by Calcamite not only ensure an uninterrupted, visually unobtrusive service but also reflect the lodge's deep-rooted commitment to environmental conservation. By effectively converting waste into a resource, the lodge maintains its pledge to preserve the natural splendour of Kruger National Park, setting a standard for responsible resource management.