

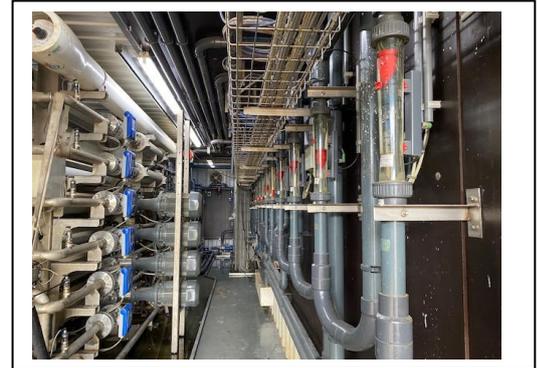
## Technology for N&P recovery as solid manure and mineral concentrate from pig and cattle slurry by belt press sieve and reverse osmosis



**Keywords:** Mineral concentrate • RENURE • Membrane filtration • Reverse Osmosis

### Key facts:

- **Category of the technology:** Mechanical separation and membrane filtration / reverse osmosis
- **Input:** Slurry/manure from pigs and cattle
- **Output product(s):** solid manure fraction, mineral concentrate and clean water
- **Available capacity:** 135.000 m<sup>3</sup>/year input
- **Focusing geographical areas:** NL, North-Brabant, Northern Limburg
- **Technology status:** Operational



### Summary of the technology:

Local transporters collect the slurry from local pig, cattle or mink farmers and transport this manure to the manure storage at Vlako's. The process starts in a reactor tank where sulphuric acid and iron sulphate are added to the slurry. From the reactor tank the manure goes to the sieve belt press. Within this press the liquid part of the manure, with minerals is separated from the solid manure, which will later be pasteurized for export and sales as organic phosphate fertilizer.

The liquid fraction is collected and sent to the flotation unit. After the flotation unit the liquid fraction goes through a paper filter where left over organic materials are filtered out. From the paper filter the liquid fraction goes through the reverse osmosis where membrane filtration separates clean water from the mineral concentrate. Only after the last step of the process, the reverse osmosis, the product can be called mineral concentrate.

Reverse osmosis is considered a best available technique to separate clean water for surface water discharge, from liquid manure fractions.

The mineral concentrate is allowed as pilot RENURE fertilizer in NL which means that application is no longer defined as livestock manure in the Nitrates Directive.

### Competitive position and advantages:

- Technology proven in practice.
- Reverse osmosis is considered a best available techniques to separate clean water for surface water discharge, from liquid manure fractions.
- The mineral concentrate is allowed as pilot RENURE fertilizer in NL which means that application is no longer defined as livestock manure in the Nitrates Directive.

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