



Minimising quantities of urban sludge

The problem

The Bièvres-Liers county council, France, owner-operators of the Côte Saint André wastewater treatment plant, faced the problem of increased sludge, due to a rise in the number of households who would be connected to the plant.

The organic sludges were initially dewatered by a belt filter process, then stabilised by post liming. After storage the treated sludges were re-used in agriculture.

As the existing site sludge storage capacity would not be able to cope with the expected increase of household wastewater, the council sought a flexible solution to the problem which would allow it to:

- Reduce the amount of sludge produced
- Minimise the level of necessary investment and offer low operating costs
- Provide a long-term solution for agricultural re-use of sludge



The solution

From its wide range of Calci-action® possibilities, Lhoist selected an option which would improve sludge conditioning before the dewatering stage.

The selected process (called calci-treatment) consists of injecting a 'dewatering booster' into the liquid sludge flow by using a Neutralac® Injecto-Matic L dosing/injection unit installed ahead of the belt filter inlet. The reagent is Neutralac® Q DB, a calcium-based product with delayed reactivity, compatible with the existing flocculant and dewatering unit.

The results were substantial:

- Reduced sludge mass of between 10 and 15% by weight
- Bio-stabilisation and agricultural re-use value for the sludge is maintained – the high pH value (12) of the stored sludge is held for months and thus odour emission is prevented
- Physical state of the sludge is improved; it is drier (between 15 - 23% dry matter) and more homogeneous

Conclusion

The process was validated over a two-month period in autumn 2002 and the new sludge process was installed in July 2003. The site operators consider the Calci-action® treatment to be safe and reliable, particularly as the sludge/Neutralac® Q DB mixture is very homogeneous.

The system is easy to run: process time is reduced, and the dewatering process is dust-free



Dewatered sludge



Structured sludge