



# **SONECO® TRIAL** **SCOTTISH WATER** **HORIZONS, BO'NESS**

Power & Water exhibited the effectiveness of our patented Soneco® system treating various water feeds at Bo'ness Wastewater Treatment works. Locating the Soneco® system at the Scottish Water Horizons Innovation Centre allowed us to demonstrate the process on a range of influents and optimise elements of our process.

# WHAT IS SONECO?

Soneco® is an alternative to liquid chemicals, by electro-generating metal ions from sacrificial anodes. These metal ions join with hydroxide ions produced at the cathode to provide a metal hydroxide coagulant. In turn, precipitating soluble phosphorus to a solid that can be removed from the treatment stream. The Soneco® system includes ultrasound, which acts as a cleaning in place mechanism to prevent passivation which is usually an inherent obstacle with electrocoagulation.

## BENEFITS OF SONECO

- Simple and easy transport of our sacrificial anodes to site reducing cost and carbon footprint.
- Generally less infrastructure changes required than for liquid chemical delivery.
- Fewer Health and safety issues such as those associated with transport, handling, storage, shower facilities.
- No pH reduction of treatment stream.
- Soneco® processes immediately once it is powered.
- The passive nature of anodes in Soneco® means there is no risk of deterioration if they're not used.

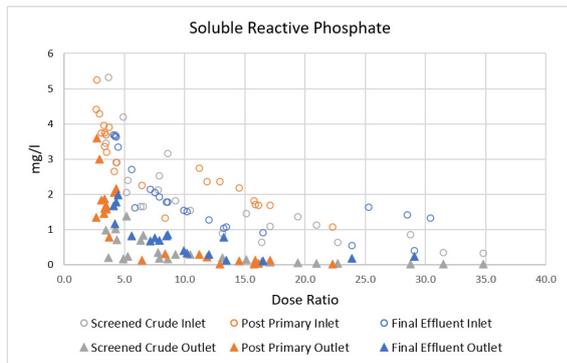


We were delighted to welcome Power & Water to our Bo'ness Development Centre, which hosted a trial of their Sono- Electrocoagulation system. It was great to see the innovation involved in this sustainable alternative to liquid chemical dosing to remove Phosphorus from wastewater. The team were a pleasure to work with and I look forward to seeing how things progress!

### **Scottish Water Horizons**



# OUR RESULTS

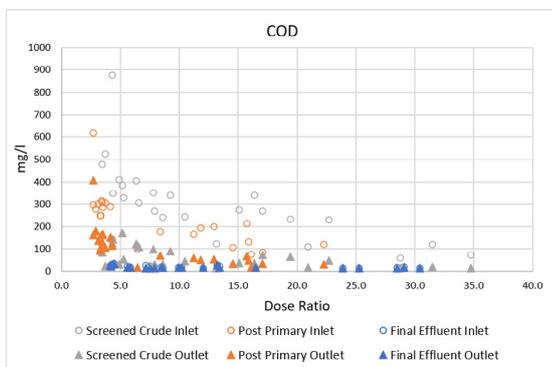
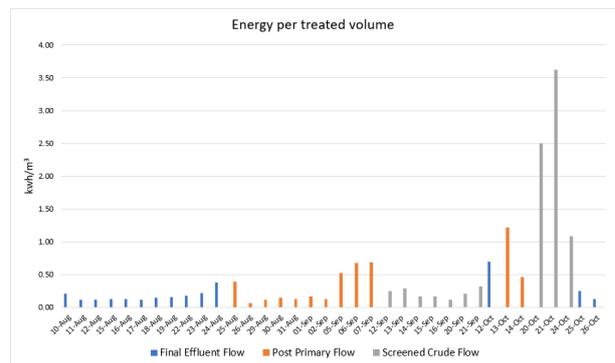


## SRP

Controlling the dose ratio facilitates increase in the removal of both SRP and total phosphorus. The final effluent typically needed a slightly higher dose than the crude or primary settled streams. A dose ratio of between 6 and 8 resulted in all flows achieving an SP below 1 mg/l. With only lamella settlement, achieving a total phosphorus below 1mg/l, with a dose of approximately 10 delivering target removal for all streams.

## POWER

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## COD

The results show that in addition to the phosphorus removal the process demonstrates good COD reduction. For crude sewage this is greater than would be anticipated by settlement alone.

## pH

Soneco@ has little or no affect on pH, whereas liquid chemicals would usually require a pH adjustment stage.

### 0.05 mg/l Achievement

Soneco was able to reach soluble reactive phosphate levels of 0.05 mg/.

### £65 Total Cost

12 weeks of operation cost £65 which was more positive than anticipated.

### Phosphorous Removed to 0.2 mg/l'

The effluent target of less than 2mg/l total phosphorus was readily achieved, and a much lower effluent concentration of 0.2mg/l total phosphorus was achieved.



**Visit our website  
to find out more:**  
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