

## How Augean protect their wastewater treatment plant and avoid compliance failures.

### Overview

Augean PLC is a market-leading specialist waste and resource management company. They are at the forefront of developing innovative process and technological solutions, have permitted strategic locations throughout the UK and are positioned to lead the modernisation of the UK specialist waste infrastructure.

At their facility in Avonmouth Augean provides an invaluable service to a wide range of companies who produce wastewaters that require treatment and disposal. Augean's processing plant comprises a complex range of treatment processes and key to their own business is the efficient operation of their Bio-tower.

Their Bio-tower provides Augean with the capability of treating 250,000 litres of tankered liquid waste per day. However the throughput of the Bio-tower has at times been compromised by treating toxic wastewaters to which it was not accustomed, but with the right acclimation process could be effectively treated.



*Augean Bio-tower, Avonmouth*

Therefore Augean developed an effluent-screening programme that is vital to both their production facility and the Bio-tower. The Strathtox Respirometer is the key to quickly and confidently assessing all potential waste effluent to ensure it will not harm their treatment facility.

## Effluent Screening Programme

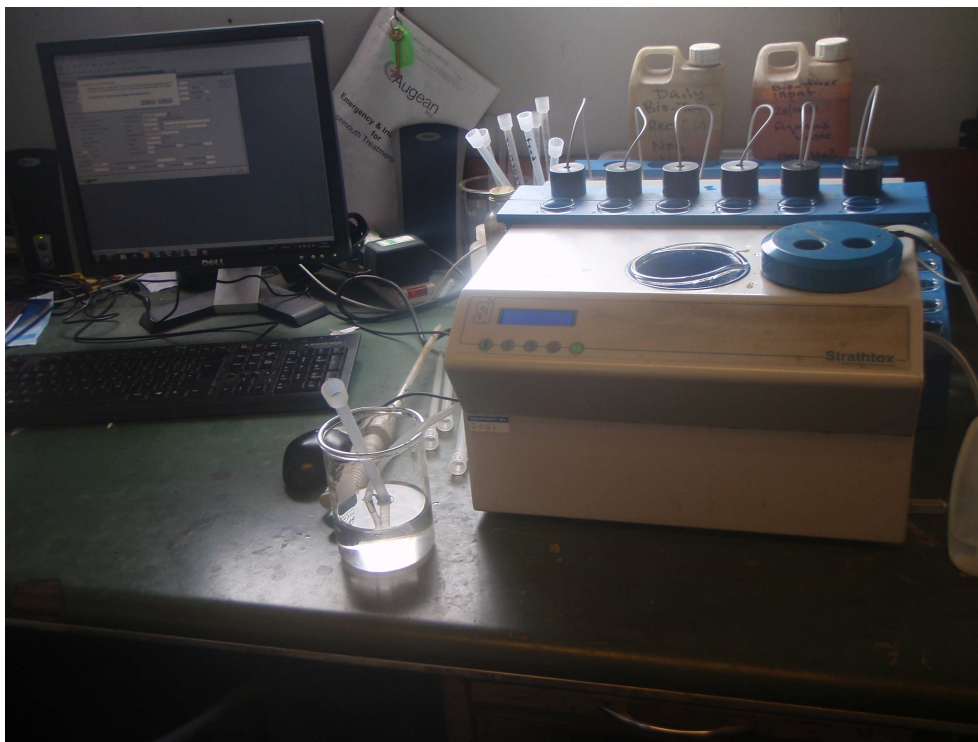
The respirometer has two main functions in the Avonmouth lab: pre-acceptance testing and tanker testing.

### **Pre-Acceptance Testing**

All potential waste streams are put through a suite of tests to determine suitability and cost of treatment. The respirometer tests for two key items: toxicity and biodegradability. For low COD effluent a zero inhibition result is sufficient but if the COD is high it is necessary to see an increase in respiration proportional to concentration. This indicates good biodegradability, which is essential to prevent accumulation and off-site consent issues. With experience it is possible to confidently assess the extent of biodegradability in any given sample just by looking at the increase in respiration rates. Longer-term toxicity can be assessed by aerating samples overnight and re-testing after 24 hours.

### **Tanker Testing**

Every single tanker that arrives is tested with the respirometer before it is allowed to discharge. This can be done in less than 10 minutes. This maintains a high level of security without compromising turn-around time. The graphs produced are compared against the pre-acceptance results to ensure the effluent is as described. The other required tests are completed whilst the respirometer is running to keep analysis time down to a minimum.



*Augean's Laboratory showing their Strathtox respirometer.*



Augean PLC  
Smoke Lane  
Avonmouth  
Bristol  
BS11 0YA

### Cost Reduction Programme

Before the Biological Effluent Screening it was very difficult to make confident decisions about which effluent could be safely treated at the Bio-tower. It was necessary to err on the side of caution and refuse many potential effluent streams. Now that Augean can effectively test them they have been able to treat many wastewaters in-house and increase the throughput of the system. This is a far superior environmental and effective means of dealing with aqueous waste.

### Conclusion

The use of the Respirometer has allowed Augean to confidently route incoming wastes through the most effective treatment process on site whilst maintaining the health and efficiency of the Biological Treatment Plant. It has also allowed Augean to monitor the health of the biomass and to increase the capacity utilisation of the Bio-tower itself.

By screening the waste inputs at the acceptance stage Augean have been able to isolate streams that are excessively inhibitory to the Bio-tower, which has meant in practice that the respirometer has paid for itself by preventing a reduction in COD removal efficiency.