



Water treatment and solutions for distilleries

Many different forms of wastewater can be generated during the production of whisky.

Here, David Gaskill, Proposal Manager at Siltbuster Process Solutions (SPS), a leading UK water treatment specialist, discusses the latest thinking when it comes to getting treatment right.

The Threat of Wastewater

Given how damaging untreated water can be if discharged to local watercourses, especially to the flora and fauna of an area, it is no surprise that discharge consents can be demanding. With this in mind, it's essential that best practice is adhered to when it comes to wastewater treatment.

Historical Treatment

Distillery wastewater often has a high organic load and is often highly biodegradable. It also contains suspended solids, copper – from the stills – and it will vary in its pH. These characteristics all present threats to the environment.

With this in mind, it is good practice for distilleries to install a Balance Tank with pre-screening. This helps to collect wastewater and minimises the size of downstream wastewater treatment plant processes, as the flow and characteristics of the wastewater are buffered within the tank.

Once the wastewater has been balanced, a wastewater treatment plant can set to work often reducing the suspended solids first. From there the wastewater is often biologically treated followed by further suspended solids removal so it can be discharged offsite within consent criteria. Aerobic processes are particularly dominant at smaller distilleries, while larger distilleries tend to involve an anaerobic stage – producing valuable biogas – before initiating an aerobic stage and then additional downstream treatment.

Historically, smaller distilleries use traditional Trickling Filters for the aerobic stage. This involves circulating water over a fixed media bed – rocks or plastic media on which bacteria grows – and allowing natural ventilation to provide the oxygen for the aerobic process. Although effective, lots of these plants are beyond their design life and the structure of many Trickling Filters can be

unstable, presenting a hazard. An additional problem is that during their lifetime, the media often gets blocked by excess biomass.

New Ways of Thinking

At SPS, we can replace Trickling Filters with a more compact aerobic process facilitated by Moving Bed Biofilm Reactors (MBBR). By using blowers to provide oxygen and mixing, the media houses the bacteria within the MBBR. This enables a large volume of wastewater to be treated in a much smaller footprint than is achievable with other aerobic processes. The air helps to scour the excess biomass from the media, enabling fresh biomass to process the wastewater and reduce the Biological Oxygen Demand (BOD) and the associated Chemical Oxygen Demand (COD). Also, since the bacteria are grown on and within the media, MBBR units are more resilient to any shock loadings when compared to any other aerobic processes.

Fresh Thinking In Practice

In one distillery, SPS enhanced the existing treatment plant by adding a Dissolved Air Flotation (DAF) unit after the Balance Tank. This worked to reduce the suspended solids which would otherwise be determinantal to downstream processes. This was installed with gravity flow to and from the DAF, within the existing plant which was installed last century.

Five years later on the same site, SPS also installed a packaged MBBR prior to the existing Trickling Filter. This was done on a hire basis to allow an opportunity for the distillery to assess its impact on processing the site's wastewater. The performance was such that the distillery purchased the unit.

SPS worked with the distillery in order to identify the tie-in points and ensure that the pre-tested equipment was delivered, installed, commissioned and processing wastewater at full flow within a couple of days. This minimised disruption to production at the distillery.

In Conclusion

By working collaboratively with wastewater treatment providers, distilleries can incorporate plants designed to maintain or even grow production while safeguarding the environmental protection of their surroundings, avoiding potentially costly fines in the process.

For further information:

www.siltbuster.co.uk

Add new flavours to your range

Are you a distiller, brewer or cider producer keen to upscale your operations by adding a new flavour to your range?



Flavour compounds from Simpsons Beverages can offer you the perfect solution. Supplied as a single, premixed liquid, they contain all the ingredients you need to manufacture your drink. Simpsons produces flavour compounds for all spirits - gin, rum, vodka or whisky, ready to drink cocktails, beer, and cider too!

With just one ingredient to source and manage, compounds help you ensure your manufacturing process is lean. They remove the requirement for you to stock many ingredients with varying expiry dates, lead times and order quantities.

Adding new flavours to your range can really help to ensure your brand stands out against your competitors and boost your sales. The NPD experts at Simpsons can work together with you to develop bespoke flavours, or match those currently on the market. You may be looking to create a new flavoured gin, rum or spiced whisky, or maybe you would like to add some new fruit flavours to your beer or cider. Whatever your project, they are there to help, every step of the way, from planning to production. In addition, the Simpsons sample service can assist you approach buyers and prospects with ready-to-taste concepts.

For further information:

sales@simpsonsbeverages.com