

## **DP-SK-007- Effluent treatment and discharge to surface water**

The Dovecote Park Abattoir at Skellingthorpe is an existing permitted facility for the slaughtering of animals and carcass production.

This permit variation application is for the addition of an effluent treatment plant to treat the wastewater produced from the onsite activities and the discharge of treated wastewater into the surface water known as Skellingthorpe Main Drain.

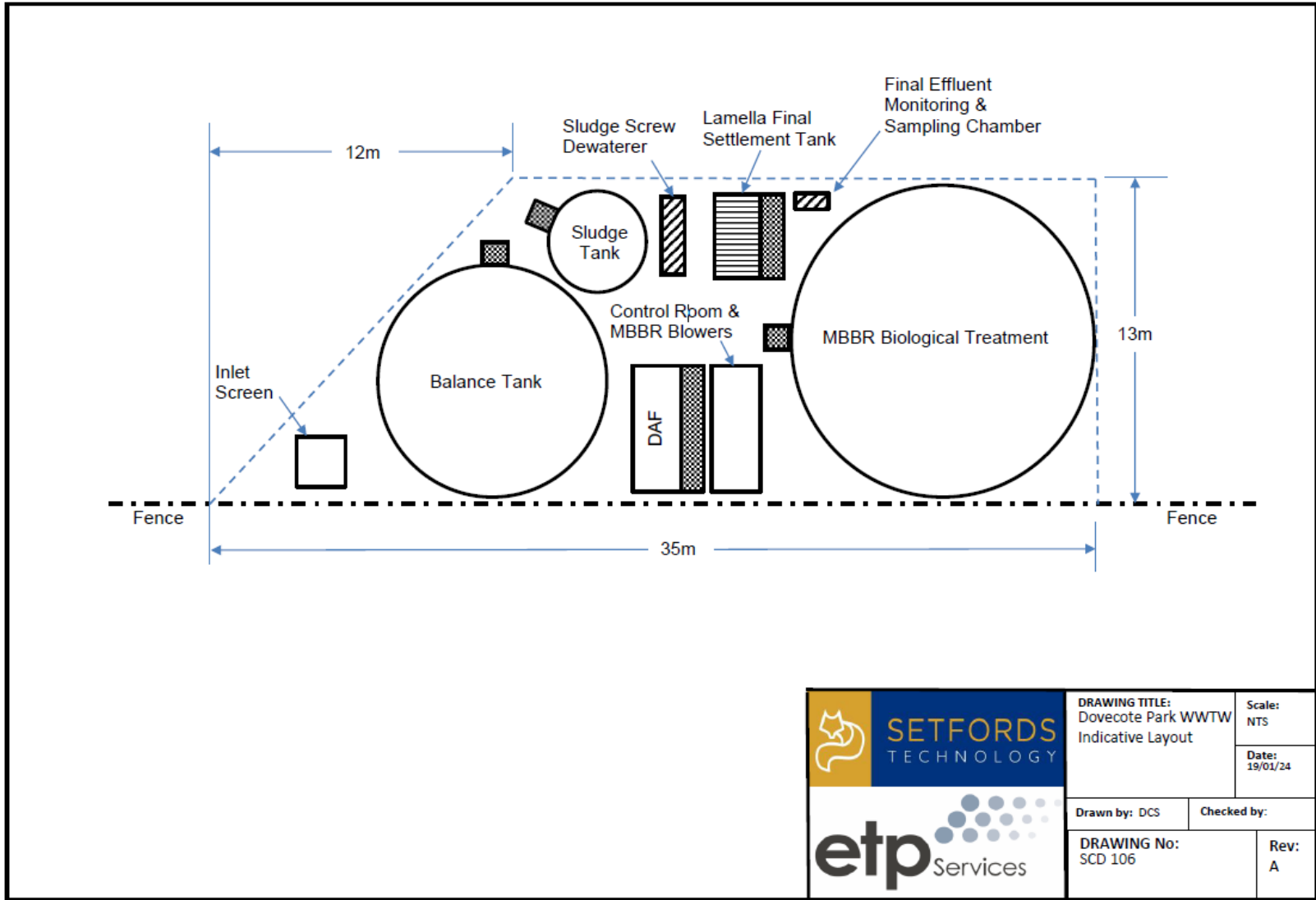
The slaughter wastewater comes from the pre-slaughter washing water, the post-slaughtered meat and viscera cleaning water, and the slaughter equipment and workshop floor flushing water. The wastewater quality has large changes in relation to slaughter and production wastewater with seasons, high organic content, good biodegradability, solid suspended solids content. The slaughter wastewater contains some blood (majority collected separately), grease, hair, meat scraps, partial contents from washed internal organs, and is organically biodegradable through a wastewater treatment system.

The site currently disposes of the wastewater to an outside contractor for use in landspreading activities but with the addition of the effluent treatment plant this avoids the need to outsource and the associated storage. Connection to the local sewerage undertaker has been sought but Anglian water have refused connection into the public sewer due to not having the biological capacity to treat the proposed flow effectively.

The effluent treatment plant has a sampling and measurement chamber to ensure the effluent meets the discharge parameters for the watercourse as outlined in the Environment Agency (EA) guidance, H1 Annex D2: assessment of sanitary and other pollutants in surface water discharges. Target quality standards for Skellingthorpe Main Drain were provided by the EA and used in the calculations. The final effluent quality does not contain Ammonia or Phosphate so therefore calculations were not required for these parameters. Document referenced DP-SK-010 outlines the calculations to determine the impact of discharging the treated abattoir wastewater into Skellingthorpe Main Drain. Biochemical Oxygen Demand (BOD) is a parameter the EA considers as a quality standard and the treated effluent contains a small amount of BOD. The surface water risk assessment undertaken ensures the current water quality does not deteriorate more than 10% for Biochemical Oxygen Demand, a concentration considered permissible for discharge according to the H1 Annex D2 guidance set by the Environment Agency. A BOD concentration of 22mg/l with a flow rate of 2.31l/s over 24 hours is within acceptable limits, causing no more than a 10% deterioration in water quality. This concentration is considered permissible for discharge. The modelling tool uses a 95-percentile standard.

A flow recorder and logger will be installed to ensure the daily flows are not exceeded and provide a record for EA inspection. Regular samples will be taken monthly and analysed for all final effluent parameters. Figure 1 outlines the indicative layout of the effluent treatment Plant.

The tanks are glass coated with steel with the exception on the Lamella tank which will be grade 304 stainless steel. A local contractor will take away the sludge by-product.





	<b>DRAWING TITLE:</b> Dovecote Park WWTW Indicative Layout		<b>Scale:</b> NTS
			<b>Date:</b> 19/01/24
	<b>Drawn by:</b> DCS	<b>Checked by:</b>	
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Figure 1: Indicative layout of the effluent treatment plant