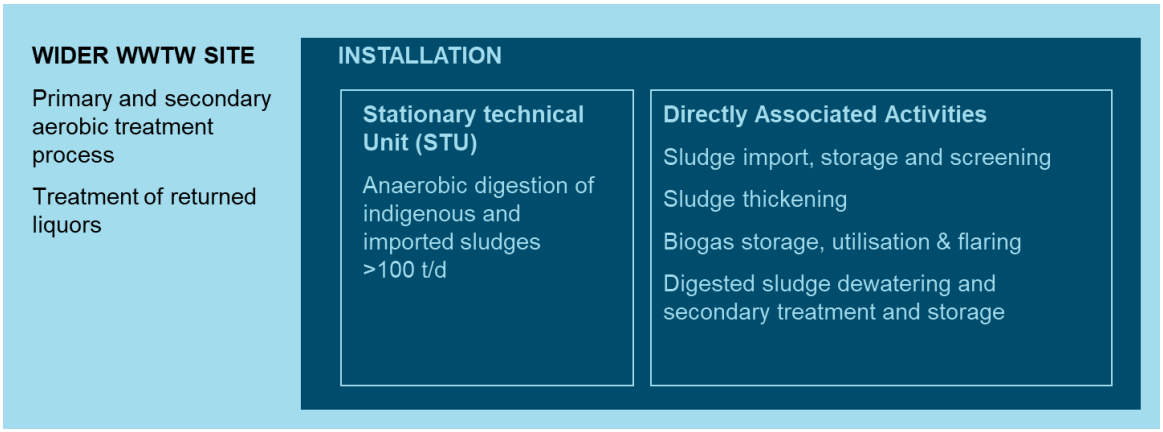
Non-technical Summary

Summary of changes

This application is being made due to changes to the Environment Agency (EA) interpretation of the environmental permitting exclusion for Urban Wastewater Activities (under Environmental Permitting (England and Wales) Regulations 2016 (EPR) Schedule 1, Part 2, Chapter 5, Section 5.4). The EA interpretation now requires that anaerobic digestion (AD) plants with a treatment capacity of over 100 tonnes/day (t/d) are classified as installations for the purposes of EPR. Furthermore, it has been determined that, in calculating digester capacity, there shall be no distinction between imported or indigenous sludges. The Yorkshire Water (YW) Aldwarke Sludge Treatment Facility (STF), part of the wider Aldwarke Wastewater Treatment Works (WwTW), exceeds the 100t/d capacity limit and therefore it has been agreed that a variation to an existing permit is required to add Schedule 5.4 Part A(1)(b)(i) for AD treatment activities currently operated on site. The site has been operating until now within the scope of a registered T21 permit exemption (reference: WEX233108) and Regulatory Position Statement (RPS) 109 in respect of Combined Heat and Power (CHP) operations burning biogas.

A summary description of activities carried out at Aldwarke STF is provided below.

Figure NTS-1 Installation schematic

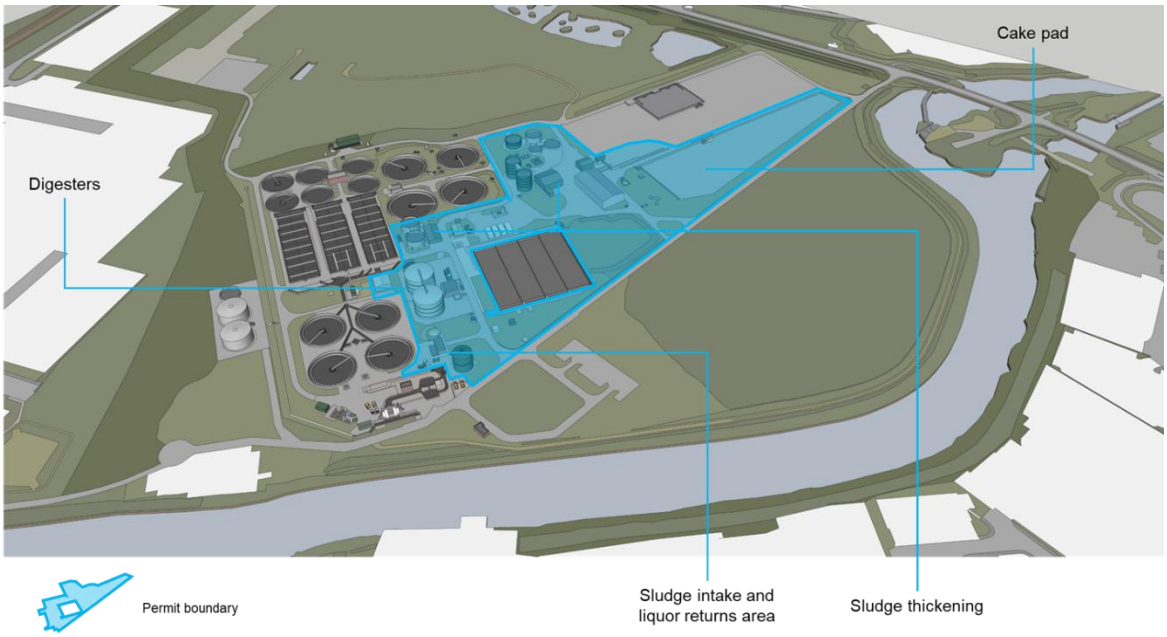


Overview of activities

The Aldwarke STF treats indigenous sewage sludges arising from sewage treatment processes operated within the wider Aldwarke WwTW as well as sewage sludges generated by other YW WwTWs. The principal activities undertaken within the installation include:

- Sludge reception and screening,
- Raw sludge thickening,
- Anaerobic digestion,
- Biogas collection and storage (including flaring if operationally necessary),
- Use of biogas (a renewable energy source) to fuel combined heat and power (CHP) plant, generating electricity and heat and / or boilers used to generate heat for the digesters,
- Digested sludge dewatering,
- Temporary storage of digested sludge prior to transfer off site for landspreading as an agricultural soil conditioning agent,
- Raw material storage and use,
- Surface water and process liquor collection and transfer to Aldwarke WwTW for treatment, and
- Waste storage and transfer off site.

Figure NTS-2 Illustration showing main activity areas



Impact assessment

A detailed assessment of emissions from the process and their potential effects on the environment, including local human and ecological sensitive receptors has been carried out.

An odour risk assessment has been undertaken. The assessment has considered thirteen process activities across the STF and potential odour effect on sixteen receptors. The assessment has been based on a Source-Pathway-Receptor approach and is primarily based upon professional judgement. The assessment concludes that, of the sensitive receptors identified for the purposes of the assessment, twelve are exposed to a negligible adverse odour effect and four are exposed to a slight adverse effect. No receptor is exposed to a moderately adverse odour effect or worse and therefore the odour effect of the site is considered not significant.

A noise impact assessment has been undertaken. The risk of noise and vibration at nearby sensitive receptors is predicted to be low; more detailed assessment and further mitigation is not required, nor is a specific noise management plan. Noise will continue to be managed through operational controls and good practice.

A fugitive emissions/bioaerosol risk assessment has been undertaken, supported by a quantitative bioaerosol survey. The risk assessment, supported by the measured results, concludes that Aldwarke STF installation is unlikely to be a significant source of bioaerosols and further bioaerosols monitoring at Aldwarke is not deemed necessary as adequate control measures are already in place.

An Air Emission Risk Assessment (AERA) utilising atmospheric dispersion modelling has been undertaken. The scope of the assessment is limited to the point source combustion emissions to air at the installation, specifically biogas combustion plant comprising two Combined Heat and Power (CHP) units and two boilers. The biogas flare which is only used for occasional / emergency purposes was screened out of the assessment.

The assessment concludes that, in relation to human health, where impacts are not classified as ‘insignificant’ (i.e. process contribution (PC) less than 1% of the EAL for long-term concentrations or 10% for short-term) the predicted impacts of the installation do not lead to any exceedances of Environmental Assessment Level (EALs) and do not constitute ‘significant pollution’.

In relation to the impact of the installation on ecologically sensitive sites, at all locally designated sites, the predicted PCs from the installation are less than 100% of the applicable annual C_{Le} or C_{Lo}. There are no international or national designated sites within the relevant AERA screening distances. Therefore, the impacts of the installation are considered ‘insignificant’ at all designated ecological sites.

A secondary containment risk assessment has been undertaken to assess whether existing measures to protect the environment in the event of a failure of containment of primary storage tanks are adequate. This study has identified some additional mitigation measures are required in order to enhance environmental protection for the identified sensitive receptors.

Site operational controls

The Aldwarke STF installation is operated in accordance with an Environmental Management System (EMS), which includes controls to minimise point source and fugitive emissions to air, water and land. The YW EMS is certified to ISO 14001 and a planned maintenance and inspection programme is in place to optimise the operation of plant.

A leak detection and repair plan is in place to minimise fugitive emissions to air.

An accident management plan has been prepared to assess risks and identify controls associated with accidents and other unplanned events.

A review of compliance Best Available Techniques (BAT) requirements contained in Best Available Techniques (BAT) Reference Document for Waste Treatment, 2018 has been undertaken. Where it has been identified that BAT is applicable and is not met (either by the stated techniques or alternative techniques) improvements are proposed. These are listed in the Proposed Improvement Programme.