

Updated Non-Technical Summary

This application is for a substantial variation to environmental permit EPR/HB3505MV under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), following a change of interpretation of the Urban Wastewater Treatment Directive by the Environment Agency.

The current permit for the site covers the operation of one CHP engine combusting biogas that is generated by the onsite anaerobic digestion of sewage sludge along with three auxiliary boilers fuelled by biogas and diesel (gas oil). Sewage sludge arises from the indigenous treatment of UWWTD derived materials supplied to the site by the sewer network and from tanker imports of waste materials to the works that are similar in composition to UWWTD derived materials. Indigenous sludge is mixed with imports of waste sludges from other wastewater treatment plants and subject to biological treatment via anaerobic digestion within one of three anaerobic digester tanks located on site.

Previously, sewage treatment sites operated by sewerage undertakers importing sludges and liquids were only regulated for the import and treatment of these materials to the wider site and indigenous sludges arising from the treatment of sewage was not required to be included in a permit. It has now been determined that the treatment of indigenous sludges do need to be permitted as they fall outside of the Urban Wastewater Treatment Directive (UWWTD).

This variation application is:

- To incorporate a new waste activity at the site for the import of tankered wastes to the works inlet for treatment through the UWWTD processes on site;
- To incorporate the addition of a new listed activity to the permit, that of biological treatment by anaerobic digestion, to make this an installation permit, including the import of sludges directly to the digesters from other waste water treatment sites;
- To add the operation of dual fuelled biogas and diesel fuelled boiler units on the site as a directly associated activity;
- To amend the site boundary to include the area of the anaerobic digestion plant and directly associated activities.

The installation covers the biological treatment of sewage sludge, both indigenous and imported from other waste water treatment sites, in a mixture with imported cess and septic tank derived wastes, by anaerobic digestion, with a capacity above the relevant threshold. There are a number of directly associated activities, including the operation of one biogas fuelled CHP unit for the generation of electricity and heat at the site, which is currently permitted and 3 boilers which are being added to the permit.

The site is located near the River Arrow, approximately 1.4km Southeast of Studley town centre.

The waste activity comprises an offloading coupling for tankers and cess vehicles to discharge through, located at the works inlet. All tanker imports are passed through a logger to record the incoming volume and the company carrying out the import. The import is directly into the works inlet, with no holding or blending tanks before the import. Once the tanker waste has mixed with the incoming UWWTD material, its treatment falls outside the scope of the Environmental Permitting Regulations.

The installation is for the biological treatment of non-hazardous wastes by means of anaerobic digestion. Sludge from the UWWTD treatment processes on site is thickened and stored in one of three batch tanks, prior to treatment. There is an import point for sludge transfers from other waste water works, near to the anaerobic digester assets. This imported material is transferred and blended with the indigenous sludge separated from the main aerobic treatment flow and site derived SAS (surplus activated sludge) from the SAS belt thickeners, in the pre-digestion blending tank.

The pre-digestion blending tank is used to ensure that the incoming materials are properly mixed to give a more homogeneous mixture, prior to transfer to the primary digesters. All four primary digesters are above ground tanks, concrete and operate on a continuous process basis, that is incoming sludge is added to the

process as digested sludge is removed from the primary digesters. Removed sludge is transferred to one of four above ground pathogen kill (path kill) tanks to ensure that the required level of pathogen kill has been achieved. Following this, fully digested sludge is transferred to site dewatering equipment, where, following the addition of polyelectrolyte based coagulant, it is dewatered and stored on the sites open cake pad. Treated cake is removed from the pad for landspreading under the Sludge Use in Agriculture Regulations 1989, in accordance with the Biosolids Assurance Scheme (BAS). Centrate from the dewatering process is transferred to the centrate tank, prior to return back to the works inlet for treatment in the UWWTD process.

Biogas is captured from the primary anaerobic digesters and stored within a telescopic roof biogas storage holder. The above ground biogas transfer pipeline is equipped with condensate pots that capture entrained moisture from the generated biogas and allow it to be drained into the site drainage system for treatment. The telescopic roof biogas storage holder is fitted with pressure release valves as a safety precaution in the event of over pressurising the system.

The biogas is taken from the storage vessel for combustion in one permitted CHP engine, generating electricity for use both within the site and for export to the grid, and heat to maintain primary digester temperature. Biogas can also be used in three dual fuelled auxiliary boilers. In the event there is excess biogas, i.e. more than the CHP can utilise, or in the event that the CHP is unavailable, there is a ground mounted emergency flare. This is utilised under 10% of the year.

Liquor and waste waters produced within the installation boundary is transferred back into the wider sewage treatment works for treatment through the UWWTD route, prior to final release. The UWWTD comprises primary treatment of screening and settlement, followed by secondary treatment in either an activated sludge process (c70% through ASP) or biofilters (C30%) and tertiary treatment by sand filtration if required.