Ashford Sludge Treatment Centre Environmental Permit Application

Main Supporting Document
790101_MSD_Main_ASH

December 2024

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	12/04/21	Grace Peel	Alex Symeonidis	Anita Manns	First Draft
B	26/05/21	Alex Symeonidis	Shannon Stone	Anita Manns	Second Draft
C	24/06/21	Alex Symeonidis	Shannon Stone	Anita Manns	Final
D	20/12/2023	Isobel Moss	David Dray	Anita Manns	Updated for resubmission
E	03/12/2024	Anita Manns	Claire Cowdrey	Anita Manns	Updated for re-submission

Document reference: 790101_MSD_Main_ASH December 2024

Information class: Standard

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1 Non-technical summary

1.1 Overview of the Site and activities

Ashford is a Sludge Treatment Centre (STC) (also known as the “Site”) and an associated Wastewater Treatment Works (WTW). The address of the Site is Kinneys Lane, Off Canterbury Road, Bybrook, Ashford, TN24 9QB (National Grid Reference: approx. to centre of site TR 02107 43407).

The Site currently has two Environmental Permits in operation – EPR/BP3296SB - Non-hazardous allowing for a maximum of 690,000tpa to be accepted at the Site and EPR/KP3736GS for the CHP system, sludge dewatering and drying plant. The drying plant and digested sludge importing facility on-site have been mothballed and will not be included in the IED permit application.

The WTW is operated under the Urban Wastewater Treatment Regulations and has a standalone Water Discharge Activity Environmental Permit, this will remain an independent permitted activity.

The STC operation is a non-hazardous waste activity, with the CHP activities currently permitted separately. The waste activity comprises of imports, physio-chemical and anaerobic digestion (AD) treatment, and the storage of waste, all for recovery purposes. The STC solely handles waste derived from the wastewater treatment process, either indigenously produced on-site or imported from other Southern Water owned assets.

Southern Water are applying to vary EPR/BP3296SB to incorporate anaerobic digestion to meet the IED and consolidate EPR/KP3736GS for the CHP system.

It is intended that:

- Anaerobic digestion of sludge
- Non-hazardous biological treatment via a liquor treatment plant
- Acceptance of liquid waste to the Head of Works in the form of cess.

Will be separately listed activities on a single consolidated Installation permit

Anaerobic digestion of sludge

As advised by the Environment Agency through consultation at the WaterUK Waste and Recycling Network and a letter sent to all Water and Sewage Companies at director level in July 2019, Southern Water is applying to vary the existing bespoke waste activity permit into a Bespoke Installation Permit for the STC activity, as a joint Environment Agency and DEFRA decision has been made that Anaerobic Digestion (AD) treatment facilities at WTW STCs are covered by the Industrial Emissions Directive and can no longer operate under standard environmental permits or exemptions.

The primary permitted installation activity will be the AD treatment facility. The AD facility will treat indigenously produced and imported sludges. Permitted Directly Associated Activities (DAAs) will be the import of waste from other WTW assets; the physio-chemical treatment of imported and indigenously produces sludges; the storage of indigenously produced sludges, imported sludges and the sludge cake from the AD facility; the storage of biogas derived from the AD treatment of waste and the combustion of biogas in an on-site Combined Heat and Power plant (CHP). In the event the CHP cannot run due to operational issues, biogas will be combusted via one flare and back-up boiler system.

Liquor treatment plant

Liquors from the STC processes is pumped to the liquor treatment plant prior to being discharged to the head of works for further treatment in the WtW. The LTP is an AMTREAT® plan, which was installed in 2008. The LTP is located adjacent to the STC. Treated effluent is discharged to the adjacent Ashford WtW, with solids drawn from the tanks regularly. RAS is returned back to the anoxic tanks and SAS is directed to the head of the works for further treatment.

Acceptance of waste to the head of the works

Southern Water wishes to remain able to accept cess to the head of the works. The cess is discharged to the dedicated cess reception facility, before joining the incoming, indigenous flows, from the sewer network, into the head of works to be treated through the WtW.

1.2 Overview of the STC process

Currently Ashford accepts indigenous sludge, imported liquid sludge and imported cake. Imported and indigenous sludge is transferred to the sludge reception tank and is processed before being fed to the 4 No. anaerobic digesters. The anaerobic digesters produce biogas which is piped to the one gas holder. The biogas produced is burnt in the existing CHP engines to produce electricity (powering the site's electrical equipment) and heat to maintain temperature within the digestion process. In times of low site demand electricity is exported to the grid. In the event of CHP failure, back up heat is provided by two boilers.

A flare is available to burn excess gas.

Imported sludge is received in 3 No. sludge reception tanks (100m^3 each). Indigenous sludge and imported liquid sludge are screened via 2 No. strain presses and are then stored in 2 No. post-screened sludge tanks (1,300m^3 each). The sludge is pumped to 2 No. gravity belt thickener to be thickened. Imported sludge cake is then blended with the screened sludge in 1 No. cake blending tank (50m^3) and stored in 2 No. thickened sludge storage tanks (420m^3 and 1500m^3) which feed 4 No. conventional mesophilic anaerobic digesters (totalling 10,100m^3).

Digested sludge is stored in 2 No. post-digested sludge tanks (766m^3 each) prior to being dewatered by 1 of 2 No. centrifuges. Dewatered digested cake can then be limed and taken off-site to use on farmland from Cake Bay 10 or stored in the alternative cake storage bays for a period of time prior to be being used on farmland.

Sludge liquor from the gravity thickeners and sludge centrate is stored in 1 No. liquor balance tank and is fed to 1 No. AMTREAT® liquor treatment plant for treatment. Treated liquor is returned to the primary settlement tank distribution chamber.

Biogas produced from the 4 No. anaerobic digesters will be transported to 1 No. gas holder (2,200m^3). The biogas produced gas will then be burnt in the existing CHP engine (5.93MWth) and 2 No. back-up boilers (0.94MWth and 1.16MWth rating) to produce electricity and heat for use on-site or export to the grid. The current waste biogas burner (or flare) will be retained and available to burn excess gas during breakdown and maintenance at a rate of 1500m^3/hr.

All sludge treatment process are covered or enclosed. Odorous air is extracted by 1 No. wet chemical scrubber system. The OCU controls odour from the STC tanks and process areas including: cake reception building, cake reception process plant, sludge reception building, cake blending tank, strain press skips, thickened sludge storage tanks (both), sludge thickener building, sludge reception tank, sludge pumping station, post screened storage tanks, liquor balancing tank, anoxic tanks (both) and the LTP reactors (both).

For context in relation to the cess reception point, there is a second dedicated OCU, which is a biofilter (pumice media) with carbon scrubber.

Table 1.1: Combustion Plant Details

	CHP1	Boiler 1	Boiler 2
Make/Model Number	Caterpillar G3520C	SRU3S-10 (12 SECTION)	SREBEL RU3/10
Date that MCP became operational/was commissioned	2010	1998	2022
Thermal Input (MWth)	5.931 (2360kW output)	0.94 (800kW output)	1.16 (925kW output)
Stack height (m)	15-20	12	12
Fuel used (biogas, diesel etc)	Biogas	Dual fuel (biogas/oil)	Dual fuel (biogas/oil)
Estimated total hours of operation per year	7971.6	1038 on biogas /1 oil	876
MCPD and SG Regs status	Existing MCP	Existing MCP	New MCP

The IED permit will include:

- 3 No. Sludge reception tanks (100m^3 each) (covered)
- 2 No. Sludge strain presses
- 1 No. Cake blending tank (50m^3) (covered)
- 1 No. Gravity belt thickener
- 2 No. Post screened sludge tanks (1,300m^3 each) (covered)
- 2 No. Thickened sludge storage tanks (420m^{3}and 1,500m3) (covered)
- 4 No. Anaerobic Digesters (two 1,550m^3, one 2,880m^3 and one 4,119m^3) (covered)
- 2 No. Post-digested sludge tanks (766m^3 each) (covered)
- 1 No. Lime stabilisation
- 1 No Dewatering plant.
  - 2 No. centrifuges (1 duty, 1 standby)
- 1 No. Liquor treatment plant (LTP)
  - 1 No. Liquor balance tank (2800m^3) (covered)
  - 2 No. Anoxic tanks (140m^3 each) (covered)
  - 2 No. Amtreat Reactors (1275m^3 each) (covered)
  - 2 No. Final settlement tanks (230m^3 each) (open)
- 7 No. Cake bays (total 5,557m^3) (open)
- 1 No. CHP unit (5.93MWth)
- 2 No. Standyby boilers
  - Boiler 1: 800 kW (0.94MWth) dual fuel (biogas/gas oil) boiler which heats the anaerobic digesters
  - Boiler 2: 925 kW (1.16MWth) dual fuel (biogas/gas oil) boiler
- 1 No. Gas bag holder (2,200m^3)

- 1 No. Biogas burner (flare)
- Odour control units (OCU) 1 No. – wet chemical scrubber serving the STC tanks

The following are outputs from the process:

- Cake (dewatered post digestion sludge) - stored in cake bays before being shipped for use as a fertiliser;
- Bio-gas - stored in an existing 2,200m^3 gas holder, then either:
  - Burnt in the CHP or back-up boilers to generate electricity for use on-site of export to the Grid;
  - Flared in the waste biogas burner.
- Grit and screenings (small amount) – deposited in skips before being taken off-site.

The site has three standby generators providing back up power supply to essential elements of the wastewater treatment process only. There are no generators serving the STC.

1.3 Summary of key technical standards

Table 1.2 lists the technical guidance notes (TGNs) used to inform the techniques and measures proposed to prevent and reduce waste arising and emissions of substances, including during periods of start-up and shut down, momentary stoppage and malfunction, and leaks.

Table 1.2: Part C3, Question 3a, Table 3a: Technical standards

Installation name	**Goddard's Green STC**	
C3 – Installation		
Description of the schedule 1 activity or directly associated activity	**Best available technique (BATC, BREF or TGN reference)**	**Document reference**
Section 5.4 non-hazardous waste installation - anaerobic digestion installation regulated under the Industrial Emissions Directive, utilisation biogas for energy	• Biological waste treatment: appropriate measures for permitted facilities • Non-hazardous and inert waste: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply • https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities
Section 5.4 non-hazardous waste installation – liquor treatment.		
B4 – Waste activities		
Description of the waste operation	**Appropriate measure (TGN reference)**	**Document reference**
Acceptance of waste to the head of works (Cess)	• Non-hazardous and inert waste: appropriate measures for permitted facilities • Biological waste treatment: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities • https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply
General		
All activities	**Guidance**	**Document reference**
	• Monitoring stack emissions: technical guidance for selecting a monitoring approach • M1 sampling requirements for stack emission monitoring • Environment Agency environmental permitting guidance, including: • Risk assessments for your environmental permit	• https://www.gov.uk/guidance/monitoring-stack-emissions-technical-guidance-for-selecting-a-monitoring-approach • https://www.gov.uk/government/publications/m1-sampling-requirements-for-stack-emission-monitoring • https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

Installation name	Goddard's Green STC	
	• Energy efficiency (Energy efficiency for combustion and energy from waste power plants) • Noise assessment and control • H4 Odour management • H5 Site condition report • Control and monitor emissions for your environmental permit	• https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits • https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits • https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management • https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report • https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

Source: Mott MacDonald

1.4 Revisions since 2021 application submission

The application was first submitted in 2021. This Main Supporting Document includes details that have been updated following feedback received over the past three years in relation to IED permit applications for the anaerobic digestion of sewage sludge. Table 1.3 provides a summary of the stand-alone documents included as part of this application, and the amendments where applicable. Where a document has not been amended due to it remaining applicable, the original reference number remains unchanged. Where a document has been updated this document will supersede any previous versions.

Table 1.3: Summary of revisions

Document name	Latest document reference	Summary of amendments
Main supporting document	790101_MSD_Main_ASH December 2024	Resubmitted – updated to include wider feedback from the Environment Agency
Environmental Risk Assessment	790101_ERA_ASH December 2024	Resubmitted – updated to include complaints recorded since 2020 and completion of air quality risk assessment.
Environmental Constraints Maps	790101_ERA_Maps_ASH December 2023	Resubmitted. Human receptor map screening distance increased to 2km
Bio-aerosol Risk Assessment	790101_ERA_BioaRA_ASH December 2023	Resubmitted – updated to include bio-aerosol monitoring proposals and new windrose.
Odour Management Plan	790101_ERA_OdourMP_ASH December 2024	Resubmitted – updated to include new windrose, updated complaints recorded since 2020 and feedback from the Environment Agency. Removed reference to WWTW, added in 2km human receptor map, updated mitigation measures following T1 feedback, and improvement works to the site.
Climate Change Risk Assessment	790101_ERA_CCRA_ASH	No change. To be included as part of the management system for the site.
Site Condition Report	790101_MSD_SCR_ASH December 2024	No change from initial application submission
BAT analysis	790101_MSD_BAT_ASH December 2024	[Resubmitted – updated to include changes by Southern Water and wider feedback from the Environment Agency.
Site Layout and Location Plan	790101_MSD_SiteLayoutPlan_ASH December 2024	Resubmitted – updated to reflect proposed secondary containment, liquor transfer point, liquor sampling point and changes to point source emissions.
Drainage Plan	790101_MSD_DrainagePlan_ASH July 2021	No change from initial application submission
Schematics	790101_MSD_Schematics_ASH December 2024	Updated to include separation of AD and waste activities in response to Request for Information November 2024
Environmental Management System Certificate	790101_MSD_EMS_ASH December 2023	Resubmitted. Certificate has been renewed.
Relevant Offences	790101_MSD_RelevantOffences_ASH December 2023	Resubmitted – updated to reflect new offences since original submission.
Details of Directors	790101_MSD_Directors_ASH December 2024	Resubmitted as a separate document direct from SWS. Updated to reflect director changes since original submission.
Competency assessment certificates	790101_MSD_CompetencyAssessmentCertificates_ASH December 2023	Retracted, and replaced with Competency Management System.
Competency Management System	790101_MSD_CMS_ASH December 2023	Substitutes Competency assessment certificates
Material Safety Data Sheets	790101_MSD_MSDS_ASH	No change
Leak Detection and Repair Plan	790101_MSD_LDAR_ASH December 2023	Additional document for T2 sites

Table 1.3: Summary of revisions

Document name	Latest document reference	Summary of amendments
Duty of Care	790101_MSD_DutyofCare_ASH December 2023	Additional document for T2 sites
Permeability of surfaces at the Site	790101_MSD_PermeablePlan_ASH December 2023	Additional document for T2 sites
Existing containment features map	790101_MSD_ContainmentPlan_ASH December 2023	Additional document for T2 sites
CIRIA assessment	790101-MMD-IED-ASH-CA-C-001 – IED Risk Register Ashford 790101-MMD-IED-ASH-SIM-M-101 DoNothing(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-102 DoNothing(Tank Failure Only) 790101-MMD-IED-ASH-SIM-M-103 Option1(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-104 Option1(Tank Failure Only) 790101-MMD-IED-ASH-SIM-M-105 Option2(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-106 Option2(Tank Failure Only)	Additional document. updated as part of response to Request for Information December 2024 Supersedes 790101-MMD-IED-ASH-CA-C-001 – IED Risk Register Ashford 790101-MMD-IED-ASH-SIM-M-101 DoNothing(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-102 DoNothing(Tank Failure Only) 790101-MMD-IED-ASH-SIM-M-103 Option1(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-104 Option1(Tank Failure Only) 790101-MMD-IED-ASH-SIM-M-105 Option2(Rainfall Included) 790101-MMD-IED-ASH-SIM-M-106 Option2(Tank Failure Only)
Residue Management Plan	790101_MSD_RMP_ASH December 2024	Additional document for T2 sites
H1 assessment	790101_H1 Tool v8_ASH December 2023	Resubmitted – reviewed with updated information
Air Quality Risk Assessment	790101_AQRA_ASH January 2024	Additional document awaiting approval – will submit in Jan 2024
Accident Management Plan	790101_MSD_AMP_ASH December 2023	Additional document for T2 sites
Form Part A	790101_App_PartA_ASH	No change
Form Part C2	790101_App_PartB2_ASH	No change
Form Part C2.5	790101_App_PartC2.5_ASH	Additional document. updated as part of response to Request for Information December 2024
Form Part C3	790101_App_PartB3_ASH	No change
Form Part B6	790101_App_PartB6_ASH	Additional document for T2 sites (not previously required)
Form Part E2	790101_App_Part_E2_ASH December 2024	Additional document - in response to Request for Information December 2024
Form Part F1	790101_App_PartF1_ASH	No change
Envirocheck Report	790101_MSD_SCR_ASH_AppB_Envirocheck December 2024	Additional document - in response to Request for Information December 2024
Waste transfer notes	790101_WasteTransferNotes_ASH December 2024	Additional document - in response to Request for Information December 2024
Sampling proposal	790101_Sampling proposal_ASH December 2024	Additional document - in response to Request for Information December 2024

2 Introduction

2.1 Overview

This document has been prepared to support the application to vary the existing bespoke waste activity permit into a bespoke installation Environmental Permit (hereafter referred to as 'the Permit'), reference EPR/BP3296SB, for the Ashford and Sludge Treatment Centre (STC) ('the Site') on behalf of Southern Water Services Limited ('Southern Water' or 'the Operator').

Following the joint Environment Agency and Department for Environment, Food and Rural Affairs (DEFRA) decision that AD treatment facilities at WTWs and STCs are covered by the Industrial Emissions Directive (IED) the intent of the application is to ensure the Site is permitted in line with the IED and the EPR 2016, as amended.

This document contains a description of the Site and proposed permitted activities and DAAs, an assessment of the possible effects of these activities and responses to questions in Parts A, C2, C3, B6 and F1 of the application documentation (plus supporting information where required). Completed forms Part A, C0.5, C2, C2.5, C3, B6, E2 and F1 are included as separate documents.

2.2 Document content and structure

The following application forms have been completed to support the application and have been submitted as stand-alone documents:

- Part A: About You (Document reference 790101_App_PartA_ASH)
- Part C0.5: Administrative variation of a standard or bespoke permit (Document reference 790101_App_PartC0.5_ASH)
- Part C2: Varying a bespoke permit (Document reference 790101_App_PartC2_ASH)
- Part C2.5: Application for an environmental permit Part C2.5 – Variation to a bespoke permit to add or vary a MCP/SG permitted activity at an installation or to vary an existing MCP/SG standalone permit (Document reference 790101_App_PartC2.5_ASH December 2024
- Part C3: Variation to a bespoke installation permit (Document reference 790101_App_PartC3_ASH)
- Part B6: New bespoke water discharge activity or groundwater activity (point source discharge) or point source emission to water from an installation (Document reference 790101_App_PartB6_ASH December 2023)
- Part E2: Surrender application (installations, waste operations, mining waste operations, medium combustion plant/specified generator and mobile plant only) (Document reference 790101_App_Part_E2_ASH December 2024.
- Part F1: Charges and declarations (Document reference 790101_App_PartF1_ASH)

The main body of the Permit application document ('the Main Supporting Document') includes all the supplementary information required in response to relevant questions within the Part A, Part C2, Part C2.5, Part C3, Part B6, Part E2 and Part F1 application forms for which there was insufficient space on the forms to answer the questions in full.

The Environmental Permit variation application document ('the Main Supporting Document') consists of two main parts:

- Chapter 5 provides the general information required to inform Part C2 relating to the variation of a bespoke permit

- Chapter 6 provides the more detailed information required to inform Part C2.5, Part C3 and Part E2 relating to the variation of a bespoke installation permit
- Chapter 7 provides the more detailed information required to inform Part B6

Part F1 covers the required financial information required for payment of the application fee.

Additional information included as part of this submission and not as stand-alone documents, are found in the following appendix:

- Appendix A – European Waste Catalogue (EWC) Codes

3 Process Description

3.1 Wastewater treatment works

This subsection has been provided for context only.

Ashford catchment serves the town of Ashford and surrounding villages with a population equivalent of 115,150. The sewage networks consist of mainly combined gravity sewers, some separate gravity sewers and 63 No. wastewater pumping stations with the treatment works located toward the centre. Most of the wastewater pumping stations are followed by short rising mains.

There are 6 No. terminal pumping stations. All sewage is pumped to the works inlet works from these terminal pumping stations. Due to the relatively short distances of the rising mains the sewage arriving at the treatment works is not septic.

All flow enters the inlet works and pass through 4 No. band screens and 1 No. fine screen which are all 6 mm, 2D and each rated at 667 l/s. With 4 No. screens operating as duty or assist screens and 1 No. screen as standby. There is a manually raked bypass screen rated at 2000 l/s. Screened sewage passes through 1 No. detritor for grit removal. Following grit removal flows in excess of flow to full treatment (FFT), 694 l/s overflows to 6 No. storm tanks. Settled storm sewage overflows to the outfall when storm tanks are full. Settled storm sewage is returned to the PST distribution chamber by 2 No. storm return pumps, each rated at 37 l/s, when storm subsides.

Flows up to the FFT gravitates to the PST distribution chamber where ferric is dosed for phosphorus removal. The sewage is combined with storm return, works humus sludge return, sludge liquor return, sand filter backwash return and filter recirculation flow pumped by individual pumping stations. The combined flow is settled in 6 No. (4 No. smaller and 2 No. larger with a total volume of 6337m^3) primary settlement tanks (PST). Each primary tank is auto-desludged by a separate diaphragm pump, all rated at 3 l/s, to the sludge pumping station. Settlement sewage gravitates to the filter flow distribution chamber which splits the flow 4 ways to 4 No. siphon chambers each containing siphons for 4 No. mineral media percolating filters. Filter effluent is combined and flows to the humus tank distribution chamber which splits the flow to 10 No. humus tanks (8 No. small tanks and 2 No. large tanks with a total volume of 7620m^3). The humus tanks are auto-desludged by 7 No. humus tank desludge pumps (2 sets of 2 and 1 set of 3).

Humus effluent gravitates to the tertiary nitrifying filter (NTF) pumping station and is pumped by 3 No. NTF feed pumps each rated at 926 l/s, to 4 No. tertiary NTFs with plastic media. Part of the filter effluent flows back to the NTF pumping station to provide a recycle flow. The remaining flows gravitate to the sand filter feed pumping station and are pumped by 3 No. sand filter feed pumps, each rated at 504 l/s, to 8 No. deep bed sand filters. Secondary ferric dosing occurs in feed line to the existing tertiary sand filters, controlled by the sand filter feed flowmeter in conjunction with a phosphorus online analyser. The sand filters are backwashed with filter effluent with 2 No. sand filter backwash pumps, each rated at 154 l/s. The sand filter's dirty backwash is stored in the dirty water balance tank and pumped to the primary tank distribution chamber by the sand filter backwash return pumping station. Final effluent passes through the final effluent sampling chamber and is discharged to River Stour.

3.2 Sludge Treatment Centre

Anaerobic digestion of sludge

The Site also serves as a major STC for Kent, which has both liquid sludge and sludge cake reception facilities, including Broomfield Bank WTW sludge cake reception and Weatherlees Hill WTW cake reception facilities. Indigenous sludge from primary tank desludging is transferred to 3 No. sludge reception tanks (total volume of 300m^3) where it is mixed with imported liquid sludge and is pumped through 2 No. strain presses. Screened sludge is stored in 2 No. post-screened sludge tanks (PSST) (total volume 2,600m^3). From the PSST, sludge is pumped to 1 No. gravity belt thickener to thicken the sludge to 7% dry solids (DS) content. Thickened sludge is stored in 2 No. thickened sludge storage tanks (TSST) (total volume 1,920m^3). Imported sludge cake is received from Broomfield Bank (a 100,000-population equivalent (PE) works) and Weatherlees Hill A&B (a combined PE of 200,000) in 1 No. cake blending tank (50m^3). The cake is blended in 1 No cake blending tank (50m^3) with screened sludge to 7% DS and stored in 2 No. thickened sludge storage tanks. Thickened sludge is mixed and pumped to 4 No. anaerobic digesters (1 No. large anaerobic digester, 3 No. small anaerobic digesters with a total volume of 10,100m^3). Digested sludge is stored in 2 No. post digested sludge tanks (PDST) (total volume of 1,532m^3). Digested sludge is dewatered using 2 No. centrifuges. Dewatered digested sludge cake is stored on site in 7 No. sludge storage bays (total volume 5,557m^3) before being transported off-site for storage prior to being recycled to agriculture. Sludge liquors from the gravity thickener and sludge centrate is stored in 1 No. liquor balance tank and is fed to 1 No. AMTREAT® liquor treatment plant for treatment. Treated liquor is returned to the PST distribution chamber downstream of storm overflow.

The activated sludge process and all sludge treatment process are covered or enclosed.

Biogas produced from the 4 No. digesters is transported to one gas holder (2,200m^3). The biogas produced gas is burnt in the existing CHP engine and 2 No. back-up boilers to produce electricity and heat for use on-site or export to the grid. The current waste biogas burner (or flare) will be retained and available to burn excess gas during breakdown and maintenance at a rate of 1500m^3/hr.A CHP unit is on-site and was installed in 2010 with a thermal rated input of 5.04MWth fuelled by biogas. Therefore, the Site falls within the scope of the Medium Combustion Plant Directive (MCPD) since the thermal rated input is greater than 1MWth..

A boiler was installed in March 2022 with a thermal rated input of 1.16MWth dual fuelled by biogas/gas oil. Therefore, the Site falls within the scope of the Medium Combustion Plant Directive (MCPD) since the thermal rated input is greater than 1MWth. The boiler will be required to meet MCPD requirements from the outset because it is a new medium combustion plant (MCP). It is currently operating under a Local Enforcement Position as agreed with the Environment Agency as is to be included in the IED permit. A second boiler, installed in 1998 does not meet MCPD requirements as it is 0.94MWth input rated.

Odorous air is extracted by one set of two duty standby fans and is treated by 1 No. wet chemical scrubber system. The scrubber has a retention time of greater than three seconds and the total design odour removal efficiency of greater than 99%.

The first stage of scrubbing involves a venturi spray tower. Its primary function is to prevent foam aerosol carryover and to provide some gaseous scrubbing of hydrogen sulphide (H_2S). It is designed to remove H_2S by the sulphur precipitation route using a weak bleach dose. The bleach comes from the stage 2 blow down, and a mechanically proportioned dose of neat hypochlorite solution, as a constant background dose. The sulphur deposition can only occur, if the H_2S levels are high enough to promote the reaction route (which they generally are not), and keep the pH below 8. This route is preferred, as it uses approximately 50% of the chemical required to oxidise the H_2S to sulphuric acid.

The gas then enters the second stage, which is a conventional packed tower utilising both hypochlorite and sodium hydroxide to remove the residual H_2S from the air stream. The Stage 2 scrubber has associated pH and oxidation reduction potential (ORP) control (redox probes) to

accurately dose the required amounts of sodium hydroxide and hypochlorite respectively. The cleaned gas passes through the demister and to a stack with an H_2S analyser.

The plant can be operated in automatic or manual mode.

The main OCU controls odour from the STC tanks and process areas including: cake reception building, cake reception process plant, sludge reception building, cake blending tank, strain press skips, thickened sludge storage tanks (both), sludge thickener building, sludge reception tank, sludge pumping station, post screened storage tanks, liquor balancing tank, anoxic tanks (both) and the LTP reactors (both).

The treated air is discharged via an 18m high stack. The OCU is a chemical (wet) scrubber, installed in 2010. The OCU has a total throughput of 44,000m3/hr. The concentration of hydrogen sulphide in the stack is monitored continuously using a Draeger ChemLogic 1 instrument provided by Pollution Monitoring.

For context in relation to the cess reception point, there is a second dedicated OCU, which is a biofilter (pumice media) with carbon scrubber. This OCU has a throughput of 120m3/hr.

AMTREAT® Liquor Treatment Plant

The ACWA Amtreat® sludge liquor treatment plant, was installed in 2008. The LTP replaced an existing sequential batch reactor (SBR) plant. The plant is an above ground installation using glass coated steel process tanks. The tanks are accessed via stairs and associated walkways. It is designed to treat liquors from the following source arising from the sludge treatment process:

- Dewatering centrate
- Thickener liquors
- Centrifuge and thickener wash down
- Cake storage area

The LTP is designed to treat the flows and loads arising from the number of different processes within the STC. The LTP consists of the following process units:

- 1 No. Balance tank with mixing system (2,800m^3) - covered
- 1 No. Liquor blending tube for ‘hot’ and ‘cold’ liquors
- Amtreat liquor plant includes:
  - 2 No. Anoxic tanks for denitrification (150m^3 each) – covered
  - 2 No. Amtreat reactors for nitrification (1,275m^3 each) – covered
  - 2 No. Stilling tubes
  - 2 No. Final settlement tanks for solids removal (230m^3 each)
  - Associated pumps, air blowers, and instrumentation
  - 1 No. Sodium hydroxide storage and dosing system (40m^3) covered in a concrete bund.

The LTP is configured for nitrification, partial denitrification and alkalinity recovery.

The plant includes an internal nitrate recycle and RAS recycle to optimise denitrification and alkalinity recovery, which in turn minimises the sodium hydroxide dosing.

The LTP is located adjacent to the STC. Treated effluent is discharged to the adjacent Ashford WtW, with solids drawn from the tanks regularly. RAS is returned back to the anoxic tanks and SAS is directed to the head of the works for further treatment.

Acceptance of waste to the head of works

Cess is accepted into the site and is discharged to the dedicated cess reception facility, before joining the incoming, indigenous flows, from the sewer network, into the head of works to be treated through the WtW.

4 Part A – About you

4.1 Question 5c: details of directors

The details of directors at Southern Water Services Limited (Company Number: 02366670) are provided in stand-alone document 790101_MSD_Directors December 2023.

4.2 Question 7: Contact details

Whereby the contact disclosed in 7a (Anita Manns, Mott MacDonald) is not available the Environment Agency should contact one of the secondary contacts:

Name: Claire Cowdrey

Address: Mott Macdonald, Mountbatten House, Grosvenor Square, Southampton, S015 2JU

Phone number: 023 8062 8523

Email: claire.cowdrey@mottmac.com

5 Part C2 - General – varying a new bespoke permit

5.1 Questions 2 – Table 1: Changes to existing activities

The variation application is to modernise the conditions of the existing physical treatment activity (A16) as authorised under the permit reference EPR/BP3296SB, where required, and to add the scheduled activity for Anaerobic Digestion to the same permit.

5.2 Question 3a and Appendix 2: Relevant offences

Details of the relevant convictions are provided in the document reference 790101_MSD_RelevantOffences_ASH (produced by Southern Water).

5.3 Question 3b and Appendix 2: Technical ability

The Site has two Certificate of Technical Competence (CoTC) holders, Tony Morley is assigned as Field Performance Manager (FPM) and the CoTC holder for the Ashford STC. Kevin Briggs is the Site's primary CoTC holder. As this is a permit variation, the CoTC holder will provide adequate cover for the STC activities whilst the CMS arrangements, identified below, are being confirmed. Tony Morley's and Kevin Briggs' primary and continuing competency assessment certificates, where applicable, can be found in document reference 790101_MSD_CompetencyAssessmentCertificates_ASH.

Operational management is provided by qualified individuals and considered to be technically competent. All staff on-site are trained to manage and operate activities without causing pollution.

Future competency, in terms of the requirements of the environmental permit, will be ensured through the appropriate training of all staff, covering:

- Awareness of the regulatory implications of the Permit for the permitted activity and their own work activities
- Awareness of all potential environmental effects from operation under normal and abnormal circumstances
- Awareness of the need to report any deviation from the Permit
- Prevention of accidental emissions, and action to be taken when accidental emissions occur

All staff are aware of the implications of activities undertaken including the operation of the Site. Skills and competencies necessary to work on-site are documented and records of training needs and training received for these posts are maintained.

Southern Water is currently working on an accredited Competency Management System under the Competent Operator Scheme, based on the Anglian Water Services-developed technical competency course to demonstrate that personnel have the appropriate technical skills and knowledge to manage the activities undertaken. This will be independently certificated and audited, through a third-party certification body (yet to be determined) to ensure it meets the requirements of the Competence Management System Standard, developed by Energy & Utility Skills[1]. The Competence Management System (CMS) will enable Operators to demonstrate technically competent management on the basis of corporate competence and employees'

[1] Energy and Utility Skills (2021) Competence Management System. Available online at: https://www.euskills.co.uk/about/our-industries/waste-management/competence-management-system/

individual competence. Individual competence remains a key component with each employee having the relevant technical competences required to carry out their role.

A signed licence agreement between Southern Water and Anglian Water in 2021 relating to Anglian Water Training Manuals, for the purpose of the CMS, is provided in document reference 790101_MSD_CMS_ASH December 2023. An e-learning course is being developed and certification is due to be undertaken by LRQA. The CMS is to be certified within the first 12 months from issue of a permit for the STC.

5.4 Question 3c: Finances

No relevant persons within Southern Water have current or past bankruptcy or insolvency proceedings against them.

5.5 Question 3d: Management System

The Site operates under the company-wide Environmental Management System (EMS 684981), which is certified to ISO 14001:2015 and is applicable to water supply and wastewater treatment assets at operational sites (wastewater treatment works, water supply works and water booster stations). The EMS is effective for three years from 28 July 2020 and is accredited by the British Standards Institution (BSI).

Demonstrable procedures are outlined in the Site Process Activity Manual (SPAM) and Operating Plan. Where suitable and available, any monitoring of emissions to air, land and water is undertaken according to Monitoring Certification Scheme (MCERTS) Standards by accredited contractors.

As a part of the EMS the Operator has an internal audit programme that takes places every 12 months. During this annual programme operational sites are selected as a subsample and audited. Suppliers and business areas area also audited. An annual report is produced as part of the management review, and this is signed off by Senior Management. In addition, the EMS is subject to audit by the inspection and certification company BSI (for accreditation purposes) each year, and a full certification audit is conducted every three years.

The EMS addressees the following to ensure staff understand their roles and responsibilities to comply with environmental legislation and protect the environment and human health:

- Resources, roles, responsibility and authority
- Legal and other requirements in protecting the environment and human health
- Competence, training and awareness requirements
- Explanation of the Non-Conformance, Corrective and Preventative Action procedures
- Details of the significance of Environmental Aspects and Impacts
- EMS Review and auditing procedure and requirements
- Monitoring and measurement requirements
- Record keeping procedures

To accompany the Site environmental permit the Site will have its own Management System in line with the Environment Agency guidance. This identifies all the applicable procedures under the accredited EMS but includes additional Site-specific information and procedures.

One of the key tasks for Southern Water during the permit determination process is the development of the management system arrangements to cover additional requirements in relation to the permitted operations. This may include the Climate Change Risk Assessment (CCRA) document reference 790101_ERA_CCRA_ASH to address measures to adapt to predicated additional pressure from changes in external operational conditions (such as weather

and flooding), if required. Climate change and climate resilience will be included in the ongoing future updates to the EMS.

In addition to the Environmental elements of the management system, Southern Water also has a health and safety management system which includes relevant procedures to follow with regards to accidents and the reporting of incidents and near misses. The health and safety manual is designed to comply with the Health and Safety Executive's (HSE) Managing for health and safety guide (HSG65)[2].

5.5.1 Accident Management Plan

In addition to the environmental elements of the management system, Southern Water also has a health and safety management system which includes relevant procedures to follow with regards to accidents and the reporting of incidents and near misses. The health and safety manual is designed to comply with the Health and Safety Executive's (HSE) Managing for health and safety guide (HSG65)[3].

The Site operates under an Incident Management Plan which is incorporated into Southern Water's Environmental Management System to prevent and manage environmental related accidents. The IMP includes an inventory of substances stored at the site, details on storage facilities, inventory of pollution prevention equipment (spill kits and fire extinguishers), inventory of waste and storage capacities, contact details of internal contacts (Site manager, Environmental Governance Manager and key HSE staff), national and regional (where appropriate) contact details of emergency services and environmental regulators. The IMP is distributed to key staff, to supervise the implementation of the Plan, and shared with external contacts (emergency services and the Environment Agency). The IMP is accompanied by a site plan that identifies the locations of designated storage areas (and their maximum storage capacity), location of spill kits and fire extinguisher and storage locations and hazards posed by chemical substances.

The IMP references procedures to comply with environmental legislation and protect the environment and human health in regard to potential accidents:

- Spill prevention and management, and operation of safety valves
- Procedure for recovering spilled product
- Procedures for the prevention of overfilling vessels, management of plant and equipment failures
- Fire prevention and responses to fires, including fire water containment procedures
- Security measures to prevent unauthorised access, arson and vandalism
- Competence, training and awareness requirements
- Monitoring and measurement requirements
- Record keeping procedures for the recording of incidents, accidents and near misses
- Emergency procedures to notify relevant authorities, emergency services and neighbours

There are several different document types referenced in the IMP. These have been listed below:

- EMS – Environmental Management System
- FEC – Field Event Co-ordinator's Manual

[2] Health and Safety Executive (2013), Managing for health and safety (HSG65). Available online at: https://www.hse.gov.uk/pubns/books/hsg65.htm.

[3] Health and Safety Executive (2013), Managing for health and safety (HSG65). Available online at: https://www.hse.gov.uk/pubns/books/hsg65.htm.

- IMP – Incident Management Plan
- BCP – Business Continuity Plan
- CCM – Control Centre Manual
- SIB – Safety Instruction Book
- CAT – Catastrophe Plans

Table 5.1 below provides a list along with a brief description of each of the procedures which form part of the IMP.

Table 5.1: Incident Management Plan procedures

SUPPORTING EMERGENCY PROCEDURES – IMP

Procedure Reference	Brief summary
EMS 234 Chemical and Oil Storage	Specifies the standard for storage of chemicals and oils. Outlines the amounts of substances that can be stored on site without consent from the Local Authority, and details how these substances should be safely stored. Also includes Information on the auditing, training requirements and any associated documents.
EMS 260 Pollution Prevention (standard)	Specifies the standard for managing and reducing the risk of land contamination. Outlines the tasks a manager should complete i.e., ensuring spill kits are available, and who to contact in the event of an incident. The document also lists the measures that Southern Water should take to prevent pollution incidents. Also includes Information on the auditing, training requirements and any associated documents.
EMS 265 Discharges (Standard)	Sets the minimum standard of operation in managing effluent and potable water process discharges. Details definitions which relate to the procedure and outlines the standard. Also includes Information on the auditing, training requirements and any associated documents.
EMS 360 Pollution Prevention Procedure	Outlines the responsibilities of staff in relation to the procedure. The Procedure includes details on items such as site drainage, working on or near watercourses and excavations. As well as addressing different spill types; chemical, oil and sludge/sewage. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 361 Chemical Risk Assessment (Procedure)	Defines the procedure for assessing the environmental risk rom bulk chemicals. Outlines the procedure for undertaking a risk assessment, and where required which EMS procedures need to be followed. Also addresses risk mitigation and employee awareness as well as the auditing, training requirements, reporting forms and any associated documents.
EMS 362 Environmental Fire Risk Assessment Procedure	Specifies the procedure for minimising the environmental consequence of a fire. Outlines the responsibilities of staff in relation to the procedure and provides a procedure for an Environmental Fire Risk Assessment. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 363 Procedure for Managing oil spills on sites	Outlines the responsibilities of staff in relation to the procedure. The procedure details how to determine the severity of the spill for different scenarios; land, inland waters and coastal waters/beaches, and how to prevent, control and remediate the environmental damage caused by spillages from the site. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 364 Lime Spill Management Procedure	Outlines the procedure for managing lime chemical spills at STCs. Defines the responsibilities of staff, and the procedure for managing the spill including the spill assessment and notification and escalation. Information

SUPPORTING EMERGENCY PROCEDURES – IMP

Procedure Reference	Brief summary
	on the auditing, training requirements, reporting forms and any associated documents.
EMS 365 Discharges Procedure	Defines the procedure that must be adopted when managing intermittent discharges. Outlines the responsibilities of staff in relation to the procedure and outlines the procedure where an emergency discharge is foreseeable for both emergency and stormwater and potable water. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 381 Operational Waste Procedures	Specifies the procedure for managing wastes. The procedure addresses the definitions of different waste types and outlines a general procedure for managing waste. Identifies where further procedures should also be followed for specific waste types e.g., asbestos, WEEE and waste oils. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 382 Hazardous Waste Procedures	Specifies the procedure for moving hazardous waste between different sites. The procedure addresses identifying hazardous waste, storage of hazardous waste, consignment notes and record keeping. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 461 Chemical Risk Assessment (Form)	A template for a chemical risk assessment including the following: • Site details • Chemical details • Chemical classification • Risk activity • Risks for health, fire/dsear and environment • Handling, usage and storage requirements • Management of spills • Disposal • Safety data sheet.
EMS 480 Waste Descriptions	Provides written descriptions of different waste types covering the following: • Process giving rise to the waste, • Waste characteristics, • Handling advice, • Containment • Disposal. • Name of waste • Waste classification • Producer and registered office details • EWC • Controlled Waste Regulations 2012 description • Waste type • Form • Temperature; and • SIC code. • Information on the auditing, training requirements, reporting forms and any associated documents.
FEC 307 Reporting of Unauthorised Access, Including Loss, Theft and Vandalism	Outlines the responsibilities of staff in relations to the reporting these incidents, and the procedure to be followed. Also includes Information on the auditing, training requirements and any associated documents.

SUPPORTING EMERGENCY PROCEDURES – IMP

Procedure Reference	Brief summary
FEC 320 Process Related Incidents	Specifies the procedures to follow in responding to process-related pollution incidents. Responsibilities of staff are outlined in the procedure, as well as contacting the FEC, FEC actions and reporting procedures. Information on the auditing, training requirements, reporting forms and any associated documents.
FEC 322 – Spillage Procedure	Outlines the responsibilities of staff in relation to the procedure. The procedure outlines the process for handling spillages on site including: • Spillage assessment • Notifications and Escalation • Containment • Awareness and Training • Information on the auditing, training requirements, reporting forms and any associated documents.
IMPO_101 – Overview of the Incident Management Plan	This document sets out the overall structure of the Incident Management Plans and provides a short overview of each of the main plans.
IMP 217 and IMP 218 Team Roles – Objectives and Responsibilities	Sets out the Objectives and Responsibilities for roles within the Incident Management Team and provides guidance for the ELT Representative. IMP 217 identifies when Southern Water should contact the Environment Agency, and IMP 218 identifies the process for contacting other authorities.
BCP 415 Guidance on Reporting Potential Media Interest	Sets out the types of incidents to be reported back by Field Operations Staff & Contract staff working on behalf of Southern Water that will potentially attract media interest, including contact numbers.
CCM 302 Procedure Following the Receipt of a Fire Alarm	Provides a consistent regional approach to dealing with any formal notification of a fire alarm within the Company. Outlines the responsibilities of staff, the procedure for when a fire alarm notification is received, inspections/audits, training and any associated documents.
SIB 603 Risk Assessment and Safety Instructions for Fire Awareness	Covers the following: • Training needs of staff and fire wardens • What Managers must provide (i.e. fire safety meetings, plans) • Inspections • Safety instructions for occupied sites, unoccupied sites, and company vehicles • Firefighting procedure • Records to be completed
CAT 303 Actions Following Severe Weather or Flood Warnings	Outlines the plan of actions that should be undertaken following severe weather or floor warnings and the responsibilities of the staff under these circumstances. The procedure details checklists for the following scenarios: impending severe weather, flood watch, flood warning, severe flood warning, and an all clear checklist. Also includes Information on the auditing, training requirements and any associated documents.
Environmental Emergencies Poster (EMS)	A poster which should be displayed on all sites. The poster lists the type of emergency (fires, spills etc) and both the action which should be undertaken the contact phone number which should be called. The poster also highlights a list of things which should be checked prior to work starting such as the H&S notice boards, environmental notice boards and continuity plans.
Pollution 30 Minute Plan	Outlines a five-step plan for responding to a pollution incident in 30 minutes and outlines what should be done at each of the five stages.

SUPPORTING EMERGENCY PROCEDURES – IMP

Procedure Reference	Brief summary
Site Chemical Risk Register	Southern Water electronic database containing an inventory of hazardous substances used and stored by Southern Water and those relevant to individual sites, helping Southern Water to control substance use and comply with the COSHH regulations.
Alternative Response Coordinators Booklet	These documents provide flowcharts and a step-by-step guide for completing the Alternative Response tasks.

The EMS certification can be found in Document reference 790101_MSD_EMS_ASH December 2023.

5.6 Question 5a: Site layout plan and process diagram

Plans provided, to satisfy question 5a, can be found in the following stand-alone documents:

- Site Layout and Location Plan - Document reference 790101_MSD_SiteLayoutPlan_ASH December 2024
- Drainage Plan - Document reference 790101_MSD_DrainagePlan_ASH July 2021
- Schematics - Document reference 790101_MSD_Schematics_ASH December 2024

5.7 Question 5b: Site condition report

In accordance with Environment Agency requirements, a Site Condition Report (SCR) has been produced to demonstrate the condition of the land and groundwater at the Site on issue of the proposed permit. The SCR includes the following details (section 1 to 3 of the Environment Agency template[4]):

- Site details
- Condition of the land at permit issue
- Permitted activities
- Changes to the activity

A copy of the SCR can be found as document reference 790101_MSD_SCR_ASH December 2024.

5.8 Question 6: Environmental risk assessment

As part of the application for an environmental permit, operators must assess the risk to the environment and human health from the activities that they propose to undertake. Using the methodology outlined in the Environment Agency's 'Risk assessments for your environmental permit'[5].

The Environmental Risk Assessment (ERA) sets the requirements for the management of the permitted area, emission control measures etc. It assesses the risks to the environment, amenity and human health. All control measures within the rules must be adhered to in order to obtain the permit.

The ERA assesses the impacts from the following environmental concerns:

- Point source and fugitive emissions to air

[4] Environment Agency (2013). Environmental permitting: H5 Site condition report. Available online at: https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report

[5] Environment Agency (2020) Risk assessments for your environmental permit. Available online at: https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

- Point source and fugitive emissions to water and land
- Noise and vibration
- Odour
- Litter, mud and debris
- Vermin and insects (pests)
- Human health and environment safety (i.e. visual impacts, site security, flood risk)
- Natural habitats and ecology

Where emissions result in insignificant effects these have been screened out and where further detailed assessments of potential environmental impacts are required this is noted.

A copy of the ERA can be found as document reference 790101_ERA_ASH December 2024. Constraints maps have been updated to demonstrate human receptors to a radius of 2km, as shown in document reference 790101_ERA_Maps_ASH December 2023.

6 Part C3 – Variation to a bespoke installation permit

6.1 Question 1: Table 1a: Activities applied for

Table 6.1: Question 1, Table 1a: Activities applied for

Installation name	Schedule 1 or other references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non - hazardous waste treatment capacity
Ashford STC	S5.4, Part A (1), (b) and (i)	Anaerobic digestion	Annual: wet tonnes Daily: 1615 wet tonnes	Recovery or a mix of recovery and disposal of non-hazardous waste with a biological treatment capacity exceeding 100 tonnes per day if the only waste treatment activity is anaerobic digestion. R3 - Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes) R13 - Storage of waste pending any of the operations numbered R 1 to R 12.	0	Annual: 589,637 wet tonnes Daily: 1615 wet tonnes
	S5.4, Part A (1), (b) (i)	Liquor treatment plant	Annual: 438,000 wet tonnes Daily: 1,200m3 wet tonnes	Recovery or a mix of recovery and disposal of non-hazardous waste with a biological treatment capacity exceeding 100 tonnes per day if the only waste treatment is anaerobic digestions. R3 – Recycling/ reclamation of organic substances	0	Annual: 438,000 wet tonnes Daily: 1,200m3 wet tonnes

Installation name	Schedule 1 or other references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non - hazardous waste treatment capacity
				which are not used as solvents (including composting and other biological transformation processes) R13 – Storage of waste pending any of the operations numbered R1 to R12.		
	S1.1 A (1) (b) (ii)	Biogas CHP engine As per EPR/KP3736GS	5.93 MWth	Burning any fuel manufactured from, or comprising, any other waste man appliance with a rated thermal input of 3 megawatts or more but less than 50 megawatts.		
Directly associated activities						
	Physical treatment of waste	Recycling/ reclamation of organic substances which are not used as solvents.		R3		
	Waste reception	Import of liquid sludge and cake		R3 D9		
	Use of biogas (as per EPR/KP3736GS)	Use principally as a fuel or other means to generate energy.		R1		
	Use of auxiliary standby flare as per EPR/KP3736GS)	Incineration on land		D10		
	Standby boilers	Used for emergency only 1.16MWth and 0.94MWth input rating		D10		
	Use of pressure release values	Used for emergency only, do not export electricity to the grid				
	Storage	Storage of waste pending any of the operations		R13		

Installation name	Schedule 1 or other references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non - hazardous waste treatment capacity
		numbered R1 to R12 (excluding temporary storage, pending collection, on the Site where it is produced).				
	Liming plant	Used to stabilise sludge		R05		
	Raw material storage	Storage of raw materials including chemicals, lubrication oil, antifreeze, diesel, activated carbon.				
	Discharge of condensate	Condensate from the CHP exhaust, flare gas pipelines, gas storage bag From collection to the point of discharge at the adjacent WTW.				
Name of DAA	Description of the DAA					
For installations that take waste	Total storage capacity	25,349m^3				
	Annual throughput	589,637m^3 Total 117,610 wet tonnes for indigenous 280,371 wet tonnes for imported liquid sludge 18,397wet tonnes imported cake 191,656 additional capacity 261,211digester feed				

Table 6.2: B4 Table 1a: Activities applied for (waste operation activity)

Name of waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non - hazardous waste treatment capacity
Head of works activity	Existing activity under permit EPR/BP3296SB	No change	N/A	150,000
For all waste operations	Total storage capacity	No change		
	Annual throughput (tonnes each year)	150,000		

The variation application is to modernise the conditions of the existing physical treatment activity (A16) as authorised under the permit reference EPR/BP3296SB, and to add the scheduled activity for Anaerobic Digestion and the DAAs to the same permit.

6.1.1 Question 1: Table 1b, Types of waste accepted

Southern Water requires the permit for the Ashford STC to be authorised to accept sludge waste to undergo anaerobic digestion. It is requested the annual quantity of indigenous sludge and liquid sludge imports to be accepted is 297,031m^3. None of the requested wastes are hazardous. The types of waste accepted are shown in Appendix A.

With regards to 16 10 02, the waste for this code will be cess waste and chemical toilet waste only. Some imports to head of works are on an emergency basis, for example from a pumping station failure or there is a burst rising main, the waste would be transferred via tanker to the Site and only from assets that would already discharge to the Site (indigenous). This liquid waste is by-passing the pumping station, whilst it is being brought back online. This waste stream is accepted under the Urban Wastewater Treatment Directive under normal operations.

6.2 Question 2: Point source emissions to air, water and land

6.2.1 Emissions to air

Table 6.3: Part C3, Question 2, Table 2: Point source emissions to air

Installation name	Ashford STC			
Point source emissions to air				
Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**
CHP 602145 143375 A08	CHP engine exhaust stack burning biogas As per EPR/KP3736GS	Oxides of Nitrogen (as NO_2)	500	Mg/m^3
		Carbon Monoxide	1400	Mg/m^3
		Total VOCs	1000	Mg/m^3
Flare Stack 602208 143438 A05	Waste gas burner (flare stack)	CO	50	Mg/m^3
		NOx	150	Mg/m^3
		Total VOCs	10	Mg/m^3
		NMVOC/s	5	Mg/m^3
Dual fuel standby boiler 1 602126 143408 A09	Dual fuel stand by boiler exhaust stack – operating on Biogas or gas oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250	Mg/m^3
		Sulphur Dioxide (if burning biogas)	200	Mg/m^3
Dual fuel standby boiler 2 602126 143412 A10	Dual fuel stand by boiler exhaust stack – operating on Biogas or gas oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250	Mg/m^3
		Sulphur Dioxide (if burning biogas)	200	Mg/m^3
Gas holder 602183 143377 A06	Gas holder pressure relief valve	Biogas release and operational events	No limits set	
Odour control unit 602055 143375 A07	Channelled emissions to air as identified on Site plan Including tank vents biofilter and/or scrubbing system	Ammonia	20	Mg/m^3
		H_2S	No limit specified	
		Odour concentration	1000	Oue/Nm^3
Pressure relief valves on Anaerobic Digester 1 602163 143350 A01	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limit set	

Installation name	Ashford STC		
Pressure relief valves on Anaerobic Digester 2 602129 143344 A02	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limit set
Pressure relief valves on Anaerobic Digester 3 602146 14333 A03	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limit set
Pressure relief valves on Anaerobic Digester 4 602135 143371 A04	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limit set
Pressure relief valves PDST 1 602147 143436 A14	Biogas release and operational events	Biogas release and operational events	No limit specified
Pressure relief valves PDST 2 602161 143426 A15	Biogas release and operational events	Biogas release and operational events	No limit specified
Pressure relief valves PSST 1 602107 143465 A12	Biogas release and operational events	Biogas release and operational events	No limit specified
Pressure relief valves PSST 2 602121 143457 A13	Biogas release and operational events	Biogas release and operational events	No limit specified

The emission points are shown in drawing reference 790101_MSD_SiteLayoutPlan_ASH December 2023.

6.2.2 Emissions to water (other than sewers)

Not considered applicable as the drainage network sends water to the head of the works for treatment. There will be no point sources emissions from the Site. There are no direct potentially contaminated discharges to controlled surface waters.

There will be no direct discharge of wastewater to controlled waters from the STC.

There are no direct potentially contaminated discharges to groundwaters.

Accidental releases of materials to the environment are controlled through adequate containment measures and working procedures in accordance with the EMS. Spill procedures are in place under EMS363 and 364 as well as a pollution prevention procedure EMS360. All spillages are recorded in the site diary including actions taken.

6.2.3 Emissions to sewers, effluent treatment plants or other transfers off-site

The release of liquors from the sludge treatment process is considered to be a point source emissions or direct discharges to controlled waters or public sewers, as part of the permit operation. The site layout plan, drawing reference 790101_MSD_SiteLayoutPlan_ASH December 2023, identifies the point at which liquors leave the site to enter the WTW at the inlet. A sampling location has also been identified on the site layout plan, although sampling will be

undertaken as part of a wider implementation plan under BAT and IED. An implementation plan is shown in document reference 790101_MSD_ImplementationPlan December 2023. It is therefore, considered that this will be added as Improvement Conditions to the permit.

Any liquid waste will either be reused or discharged to the drainage system of the adjacent Ashford WTW and will undergo treatment through the works before being discharged under an existing water discharge permit. On-site WTW effluent will meet the requirements of the existing discharge consent. The water used at the Site will be contained in a closed circuit; all wastewater streams will either be recycled within the process or captured and rerouted to the adjacent WTW. Discharges from condensate will be minimal. As such, there are no direct potentially contaminated discharges to controlled surface waters and no significant impacts.

All drainage (surface water or foul water) will be captured by the on-site drainage system and returned to the head of the WTW. A drainage plan of the Site is presented in document reference 790101_MSD_DrainagePlan_ASH July 2021.

The surface drainage of potentially contaminated areas from within the Site boundary is routed into the primary settlement tanks after storm separation with no discharge outside of the Site boundary. There will therefore be no risk of polluted runoff affecting off-site features due to the creation of a new hardstanding area.

Due to the anticipated very low levels of contamination of the water and the volumes involved, no monitoring of its composition is proposed prior to discharge to the WTW.

Any areas of the Site, where there is a risk of contamination of surface water, groundwater or discharge of process waters are located on impermeable concrete surface. All surface water from these areas drain to the WTW internal drainage system and are returned to the head of the works for treatment prior to discharge as final effluent.

A list of the point source emissions to sewers, effluent treatment plants and other transfers off-site is included as Table 6.3.

Table 6.4: Part C3, Question 2, Table 2: Point source emissions to sewers, effluent treatment plants or other transfers off-site

Emission point reference, and location	Source	Characteristics	Monitoring / mitigation measures prior to final discharge and emission point discharge.
Drum Thickeners, centrifuges, bund rainwater, strainpresses (S1 and S2) TR 01962 43325 TR 01931 43363	Process liquors from drum thickener and centrifuges	Variable, from processes	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M1 and M2 on site layout plan (TR 01965 43322 and TR 01932 14336)
Sludge reception (S4) TR 02053 43405	Tankered waste entering from reception point	Variable	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M4 on site layout plan (TR 02057 43405)
Washwater Dependent n equipment washed down	From the washing down of mechanical equipment during	Variable.	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP.

Emission point reference, and location	Source	Characteristics	Monitoring / mitigation measures prior to final discharge and emission point discharge.
– samples taken from various locations as listed	maintenance activities		
Gas condensate from gas holder (S6) TR 02160 43380	Condensate from CHP	Condensate with slightly elevated levels of H_2S dissolved from the biogas, resulting in a low level of acidity	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M6 on site layout plan (TR 02163 43378)
Boiler Maintenance	Boiler blow down to minimise damage from high mineral content water.	High purity water with traces of chemicals (used for boiler dosing).	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP.
Drain down of plant (Dependent n equipment drained down – samples taken from various locations as listed	Occurs during maintenance when it is necessary to drain down the feed water, hot well or boiler shell.	High purity water with traces of chemicals (used for boiler dosing).	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP.
Treated liquors (S1 and S2) TR 01962 43325 TR 01931 43363	Process liquors from the STC (dewatering liquors, cess liquors)	Variable, from processes	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M1 and M2 on site layout plan (TR 01965 43322 and TR 01932 14336)
Cake reception 1 (S3) TR 02035 43361	Sampling for waste acceptance	Variable	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M3 on site layout plan (TR 02038 43362)
Cake reception 2 (S5) TR 02074 43446	Sampling for waste acceptance	Variable	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M5 on site layout plan (TR 02077 43444)
Cess reception (S7) TR 01800 43481	Sampling for waste acceptance	Variable	Discharged to adjacent WTW (W1 – TR 01988 43291) via LTP. Monitoring point for sampling as M5 on site layout plan (TR 01802 43480)

Please refer to the ERA (document reference 790101_ERA_ASH December 2024) on the environmental risk the water emissions pose and how these are mitigated, where relevant.

6.2.3.1 Incidents of storming

The returns from the STC process enter the WTW process either via the liquor treatment plant which discharges to the inlet channel downstream of the storm overflow/storm control penstock, or via the works return which discharges to the PST distribution chamber which is also downstream of the storm overflow. The returns from the STC cannot enter the WTW process upstream of the storm overflow point so they cannot be discharged from site via that route. The

site will treat incoming crude up to Pass Forward Returns plus the returns from the STC process and returns from the WTW processes.

Southern Water will provide a wastewater and digestate buffer storage plan (listed in regard to BAT 4 in the Implementation Plan, document reference 790101_MSD_Implementation Plan December 2023). The Plan's purpose is to propose and describe site contingency arrangements to provide appropriate storage capacity or other appropriate measures to prevent or minimise emissions of wastewater or digestate being discharged off site during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. It is understood the Plan will be required to include, but not be limited to:

- Proposals for additional storage capacity with secondary containment within the site boundary for wastewater and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions.
- Procedures to cease discharges during these conditions.
- Calculation of a reasonable contingency capacity of wastewater and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions.
- A description and design specification of the buffer storage infrastructure and secondary containment measures. The design shall be completed by an appropriately qualified engineer and secondary containment shall be designed in line with CIRIA C736.
- A program of works with timescales for the implementation and construction of the buffer storage.
- A preventative maintenance and inspection regime.

6.2.4 Emissions to land

There is no point source to land. Condensate is sent back to inlet works for treatment in the WTW.

Indigenous sewer grit and screenings are collected in separate skips and removed off-site by road vehicle and transported to a suitably permitted facility.

Grit and screenings generated from the tankered waste reception points and collected in separate skips and removed off-site by road vehicle and transported to a suitably permitted facility.

Releases of raw materials to land are considered to be negligible due to adequate containment of the materials within suitable storage vessels, the provision of bunding and the presence of a contained drainage system.

Please refer to the ERA (doc ref 790101_ERA_ASH December 2024) on the environmental risk the water emissions pose and how these are mitigated, where relevant.

6.3 Question 3a: Operating techniques

This section provides a technical overview of the components, the proposed techniques and measures to prevent and reduce waste arising and emissions of substances and heat, including during periods of start-up or shut-down, momentary stoppage and malfunction, and leaks. Specifically, consideration is made of:

- The technology to be used;
- The process, in terms of how it will be operated and controlled;
- In-process controls and Best Available Techniques (BAT) Assessment; and
- Measures implemented to control emissions to air, water, sewer and land.

Table 6.4 lists the technical guidance notes (TGNs) used to inform the techniques and measures proposed to prevent and reduce waste arising and emissions of substances, including during periods of start-up and shut down, momentary stoppage and malfunction, and leaks.

The technical guidance and BAT requirements will also be addressed within Southern Water's Ashford Site Working Plan, as part of the EMS, to be made available to staff to ensure compliance with a permit, which covers the following:

- Management of activities, including security and staffing
- Emissions and monitoring, including:
  - point sources to air, water and land
  - fugitive emissions,
  - site drainage
  - storage of waste
  - odour, noise and vibration
- Site record keeping

Table 6.5: Part C3, Question 3a, Table 3a: Technical standards

Installation name	**Goddard's Green STC**	
C3 – Installation		
Description of the schedule 1 activity or directly associated activity	**Best available technique (BATC, BREF or TGN reference)**	**Document reference**
Section 5.4 non-hazardous waste installation - anaerobic digestion installation regulated under the Industrial Emissions Directive, utilisation biogas for energy	• Biological waste treatment: appropriate measures for permitted facilities • Non-hazardous and inert waste: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply • https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities
B4 – Waste activities		
Description of the waste operation	**Appropriate measure (TGN reference)**	**Document reference**
Temporary storage of imported cake (raw or digested) Acceptance of liquid sludge waste (digestate) at post digestion, for dewatering	• Non-hazardous and inert waste: appropriate measures for permitted facilities • Biological waste treatment: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities • https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply
General		
All activities	**Guidance**	**Document reference**
	• Monitoring stack emissions: technical guidance for selecting a monitoring approach • M1 sampling requirements for stack emission monitoring • Environment Agency environmental permitting guidance, including: • Risk assessments for your environmental permit • Energy efficiency (Energy efficiency for combustion and energy from waste power plants) • Noise assessment and control • H4 Odour management	• https://www.gov.uk/guidance/monitoring-stack-emissions-technical-guidance-for-selecting-a-monitoring-approach • https://www.gov.uk/government/publications/m1-sampling-requirements-for-stack-emission-monitoring • https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit • https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits

Installation name	Goddard's Green STC	
	• H5 Site condition report • Control and monitor emissions for your environmental permit	• https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits • https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management • https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report • https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

A copy of the schematics describing the operation and process can be found in document reference 790101_MSD_Schematics_ASH December 2024.

6.3.1 BAT Assessment

An assessment against the BAT Conclusions set out in the 2014/738/EU: Commission Implementing Decision of 9 October 2014 establishing best available techniques (BAT) conclusions, under the Industrial Emissions Directive 2010/75/EU has been undertaken for the Aylesford STC and the outcome of these conclusions can be found in document reference 790101_MSD_BAT_ASH December 2024. This document reflects the existing arrangement at site and any commitments Southern Water has already made during the ongoing application process. It is acknowledged that it does not fully meet BAT in some instances. Changes to site will be undertaken and completed to meet BAT, where applicable. The changes required will be submitted to the Environment Agency, in plans to be submitted as part of Improvement Conditions within the permit, for their agreement and Southern Water's subsequent implementation. An implementation plan has shown in document reference 790101_MSD_ImplementationPlan_ASH December 2023.

Supplementary documents for the BAT assessment are provided:

- BAT 1, 21 and 38: Accident Management Plan (AMP) is provided in 790101_MSD_AMP_ASH December 2023. Catastrophic failures, of tanks for example, will be included in the AMP once final designs are agreed based on the findings in CIRA/ABDA assessment.
- BAT 1, 11, 22 and 35: Residues Management Plan (RMP) is provided in 790101_MSD_ResidueMP_ASH December 2024.
- BAT 1, 8, 10, 12, 13, 14, 33, 34 and 52: Odour Management Plan (OMP) is provided in 790101_ERA_OdourMP_ASH December 2024.
- BAT 1: Environmental Management System is provided in 790101_EMS Certificate December 2023.
- BAT 2 and 52: Description of the waste acceptance and pre-acceptance procedures provided in 790101_WasteAcceptance_ASH December 2024.
- BAT 3, 6, 7 and 20: Sampling commitment and proposal for characterisation is provided in 790101_Sampling proposal_ASH December 2024.
- BAT 14: Leak Detection and Repair Plans (LDAR) are provided in 790101_MSD_LDAR_ASH December 2023.
- BAT 14: Bio-aerosols Risk Assessment (BRA) is provided in 790101_ERA_BioRA_ASH_December 2023.
- BAT 17: Environmental Risk Assessment (ERA) is provided in 790101_ERA_ASH December 2024.

- BAT 19 and 38: ABDA Tool and proposed containment solution is provided in 790101-MMD-IED-ASH-CA-C-001 P03 December 2024 and the site layout plan 790101_MSD_SitelayoutPlan_ASH December 2024.
- BAT 19: Covering of tanks is provided in the Implementation Plan, 790101_MSD_Implementation Plan December 2023.
- BAT 19: Drainage is provided in 790101_ERA_Drainage Plan_ASH July 2021.
- BAT 23: Energy Efficiency is provided in 790101_MSD_Main_ASH December 2024
- BAT 34: Reducing channelled emissions, addressed in the Odour Management Plan (OMP), provided in 790101_ERA_OdourMP_ASH December 2024.
- BAT 53: Reducing emission of hydrochloric acid (HCl), ammonia (NH_3) and organic compounds to air addressed in the Odour Management Plan (OMP), provided in 790101_ERA_OdourMP_ASH December 2024.

6.3.2 Appropriate measures assessment

In addition to the Bref and associated BATc, the appropriate measures will form part of the technical standards the Site operates:

- Non-hazardous and inert waste: appropriate measures for permitted facilities
- Biological waste treatment: appropriate measures for permitted facilities

As the Site is existing some aspects of the Appropriate Measures do not apply, as the Site was built and operated prior to the issue of the guidance. Southern Water are committed to develop the application of the key principles from the guidance into Site operation and associated management plans as soon as practicable, to ensure the following:

- Reducing or preventing contamination
- Preventing cross contamination by segregation
- Maintaining appropriate primary and secondary containment
- Ensure the Site does not exceed site capacity (design and permitting constraints)
- General management:
  - Operate with a Management System
  - Operate with applicable specific management plans (odour, accident and residue plans)
  - Inspection, maintenance and monitoring regimes
  - Maintaining and reviewing staff competency requirements
  - Maintaining appropriate security measures across the Site
  - Record keeping procedures
  - Contingency plans
- Maintaining appropriate waste storage and suitable segregation, to prevent environmental impacts. Includes tank inspection and maintenance regimes
- Operate and calibrate process monitoring systems
- Record keeping of process outputs, and appropriate handling of residues
- Emissions controls, including prepare an emissions inventory
- Apply process efficiency measures for energy, raw materials, water use and waste minimisation.

As per document reference 790101_Sampling proposal_ASH December 2024, sampling and analysis in relation to permitted waste operations, other than those related to Scheduled Activities, will be undertaken in line with ‘Non-hazardous and inert waste: appropriate measures for permitted facilities’ guidance text, using an MCERTS accredited, or equivalent, laboratory,

where available. This commitment is related to the acceptance of imported wastes to the post digestion at the Site.

6.4 Question 3b: General requirements

6.4.1 Overview

This section provides an overview of the measures in place at the Site for controlling fugitive emissions, noise and odour. An ERA has been completed and is provided with the application (Document reference 790101_ERA_ASH December 2024). The response to this question relates to Table 4 in the Part C3 form.

6.4.2 Control of fugitive emissions to air

There are no significant fugitive emissions to air of gases, vapours, or particulates as part of normal Site operation.

Details of the procedures Southern Water follow with regards to the control of mud and debris and potentially polluting leaks and spillages are addressed in EMS 360 and EMS 381.

Overall impacts of all air pollutants are considered to be low from the activities undertaken on the Site based on the results of the high-level initial air quality review. The existing approaches and relevant procedures presented in the EMS and operational procedures are considered to adequately address the emissions that may present a risk, and, therefore, an Emissions Management Plan (EMP) is not considered to be required.

An updated H1 assessment has been completed and can be found in 790101_H1 Tool v8_ASH December 2023.

6.4.2.1 CHP and flare

The available data shows the flare is used for 9.5% of the time (from measured run hours).

The planned replacement of the CHP engine will be sized to ensure the flare is operated for maintenance and emergency situations only (once the work is completed).

The flare has been tested and the emissions are compliant. The flare is not planned for replacement.

Additional work is required to ensure all BAT requirements are covered (e.g. access platforms for testing, the required testing is fully adopted into BAU and related processes).

The collation and use of flare use data forms part of wider data collation and reporting (IT) system improvements planned to meet BAT 2c for inventory, BAT 11 energy and has an influence on BATs 15b, 16b and 21c for incident reporting (re. PVRVs and gas system management).

Further information is being collated in line with discussions with the SSD LIA (KS) on 3/12/24 and will be provided in due course (regarding asset replacement plans and timescales).

The current flare is monitored for runtime on SCADA. Southern Water confirm that the flare does not operate over the 10% allowance for downtime and maintenance, therefore, the AQRA does not require updating.

6.4.2.2 Odour

The site is located to the north-east of the town of Ashford. The first evidence of sewage treatment works on-site is shown in 1898 historic mapping, with a significant expansion from

1964. The M20 is situated to the south of the Site with Henwood Industrial Estate located immediately south beyond that. The River Great Stour runs approximately 250m north-east of the Site along the Site perimeter to the south-west. To the north of the river, there are rugby playing fields and a few residential properties.

Historically, the Site has received a large number of odour complaints; 58 were recorded in 2018 and 66 in 2019. In 2020 the Site recorded an unusually high number of odour complaints with an annual total of 123, averaging about 10 odour complaints a month throughout the year. This spike in complaints is likely to have been caused by a hot spring and summer in which the majority of the local residential population were at home for extended periods, including midweek days, due to the Coronavirus pandemic.

In 2020, a scheme was approved to install covers on tanks and extract the gas to the OCU. According to the FPM, with the improvement works on site, the number of odour complaints recorded reduced to 25 in 2021, 7 in 2022 and 0 in 2023.

The Site has not operated any differently in 2023, which would result in more odorous conditions or emissions. The same odour mitigation techniques from 2019 remain in place.

There are no proposed works to be undertaken on the Site in respect of this permit application, therefore, the activities on-site are not anticipated to increase the off-site impact or result in adverse impact upon nearby sensitive receptors or the amenity of the area surrounding the Site.

All sludge treatment processes and sludge storage tanks are covered or enclosed, with exception of the LTP's final settlement tanks.

Odorous air is extracted by 1 No. wet chemical scrubber system. The OCU controls odour from the STC tanks and process areas including: cake reception building, cake reception process plant, sludge reception building, cake blending tank, strain press skips, thickened sludge storage tanks (both), sludge thickener building, sludge reception tank, sludge pumping station, post screened storage tanks, liquor balancing tank, anoxic tanks (both) and the LTP reactors (both).

For context in relation to the cess reception point, there is a second dedicated OCU, which is a biofilter (pumice media) with carbon scrubber.

The Site has an Odour Management Plan (OMP), reviewed and updated in December 2023, which identifies potential odour emissions from site operations and procedures to manage, control and minimise odour impacts. It sets out the procedures for engaging with neighbours and how the Operator will manage complaints, and the actions to be taken in the case of pollution events. The OMP also describes the monitoring and maintenance procedures to maintain the control measures. The EMS 341 air quality and odour management also sets out the process for responding to odour complaints arising from customer contact.

The OMP was written in accordance with the Environment Agency's H4 Odour Management guidance (2011).

All sludge treatment processes are covered or enclosed. Feedstock is processed upon delivery where practicable to prevent the need to store sludge. Odorous air is extracted by two sets of 2 No. duty, standby and duty, assist fans and treated by two separate wet chemical scrubber systems (sodium hypochloride and sodium hydroxide).

An odour control unit (OCU) controls odour from the STC tanks and process areas. Other odour mitigation measures implemented on-site include the use of 2 No. cobra (wet system) mist spray suppressors at storm tanks and cess reception near the Site entrance and at the northern border near cake bay 10, and 1 No. cobra (dry vapour) at cake bay 10. The placing of covers on tanks and limiting the height of rising sludge are also implemented.

The plant has the capacity to treat 44,000 Nm^3/hr of foul air. The treated air is discharged via an 18m high stack. The concentration of hydrogen sulphide in the stack is monitored continuously using a Draeger ChemLogic 1 instrument provided by Pollution Monitoring. Process and air quality monitoring data are monitored by Site personnel regularly throughout the day and are centralised on the SCADA and telemetry system to ensure emissions are free of odorous compounds.

Leak detection (methane gas analyser) is also installed on the biogas holder to ensure any leaks from the inner bag are detected. Any leaks detected on the biogas system would always be fixed immediately by Southern Water due to the process safety risk of posed by biogas.

The use of odour atomisers during unloading of waste into the system is to be considered. The removal of biosolids off-site will be undertaken as soon a practically possible whilst considering prevailing weather conditions.

The level of odour risk from the Site is considered to be medium, as shown in Appendix B of the ERA. The Site's Odour Management Plan outlines the mitigation measures in place.

The Odour Management Plan can be found in document reference 790101_ERA_OdourMP_ASH December 2024.

6.4.2.3 Noise

Initial screening has been carried out for the Site. Since the Site is not undergoing changes to equipment and vehicle movements prior to application submission, a Noise Impact Assessment (NIA) is not considered to be required. Appropriate mitigation for noise and vibration impacts are provided in the ERA.

A Noise and Vibration Management Plan would be required whereby the NIA concludes that noise and vibration requires management, such as monitoring and maintaining abatement measures. Since noise and vibration impacts are considered to be appropriately mitigated in the ERA, a Noise and Vibration Management Plan is also not considered to be required.

6.4.2.4 Dust and particulates

There are not considered to be any significant dust or particulate sources from the Site as identified in the ERA document reference 790101_ERA_ASH December 2024.

6.4.2.5 Bio-aerosols

A bio-aerosols risk assessment has been undertaken for the Site and considers the magnitude of the risk associated with bioaerosols emissions from the Site to be 'very low' to 'medium'. Operation of the Site is unlikely to lead to significant impacts at nearby sensitive receptors from bioaerosol emissions. This is in part because the majority of sensitive receptors are located more than 100m or 250m for a potential bioaerosol source. The Bio-aerosol Risk Assessment can be found in 790101_ERA_BioaRA_ASH December 2023.

6.4.3 Control of fugitive emissions to surface water, sewer and groundwater

There are not considered to be any fugitive emissions to surface water, sewers or groundwater. There is appropriate containment for the control of liquid wastes put in place to minimise any potential releases, as identified in the EMS.

6.4.4 Control of fugitive emissions to land

6.4.4.1 Solid waste

Details of waste generated at the site is demonstrated in document reference 790101_MSD_ResidueMP_ASH December 2024.

To reduce volumes of waste:

- All materials and consumables delivered to Site are inspected to ensure that they are fit-for-purpose. Damaged items are refused and returned to the supplier.
- The sludge from the post digestion sludge storage tanks is dewatered by two centrifuges to reduce its volume. Dewatered digested cake is stored in the cake storage bays, before being transported off-site for storage prior to being recycled to agricultural land as a soil fertiliser. The treated sludge meets the Biosolids Assurance Scheme Quality Standards. The volume of sludge recycled to agricultural land is monitored by the waste services team.
- The biogas from the AD process is burned in a CHP engine and is used to provide power for the Site processes.
- Polymer intermediate bulk containers (IBCs) are sent back to the supplier for re-use.
- Grit is collected for composting and used as a soil conditioner. This process is licensed and controlled via the Environment Agency.
- WEEE, batteries, waste oils and oil contaminated items such as oily rags are treated as hazardous waste in accordance with legislation, these are removed from Site by an approved supplier, using approved waste carriers.

The Site has a designated waste management area that is located in the north-west part of the Site (National grid reference: TR 02101 43401). All skips and containers are located on a hardstanding to prevent leaching into the ground. Skips and containers are clearly labelled. All waste from the Site is sorted into this waste area.

6.5 Site security

Activities are managed and operated in accordance with the management system. Access to the Site and waste is restricted by 2.8m high fencing, which is a combination of chain link and palisade. The main site entrance is secured by a 2.8m high manually operated gate. Site floodlighting is provided at all reception facilities to give good visibility at all times of the day and night. The Site is staffed 24 hours a day, 7 days a week. The Site also benefits from a CCTV system, comprising 24 cameras that cover the entrance, perimeter and waste storage areas. Regular inspections of the boundary fencing and buildings are undertaken to ensure that these have not been compromised and continue to prevent easy access to site. Repairs are undertaken in accordance with the EMS requirements.

Other risks relating to human health and the environment is presented in the ERA (Document reference 790101_ERA_ASH December 2024).

6.6 Complaints procedure

All complaints received relating to any aspect of the Site and its activities are recorded and acted upon. Complaints, and actions taken, are either recorded in the Site Diary or on a complaints record form. If a Site receives a complaint, this form should be completed and shown to the Environment Agency when they next inspect the Site. The forms will be used as evidence that any complaints received have been taken seriously and that actions have been taken to rectify any problems identified.

Complaints will be investigated promptly, and any appropriate remedial action taken. The complainant and anyone else likely to have been affected, should be informed about what has been found and actions taken in a timely manner. The details of the complaint and the actions taken will be recorded in the Site Diary or log.

The aim will be to undertake measures to prevent complaints from being raised. However, where this is not possible, proactive measures will be taken to prevent further complaints from being made. For example, if a complaint is made with respect to dust, the Site Manager will arrange for dust suppression equipment to be used. The Site Manager will assess whether further control measures will be required to ensure that the risk of recurrence is minimised. The details of the complaint will be recorded in the Site Diary and the complaints register. If a complaint is received Southern Water will be informed as soon as is practicable and the complaints procedure will be followed. Confirmation will be recorded in the Site Diary or inspection log. The Site Manager will inform the Environment Agency of the complaint, if appropriate.

Any drivers who regularly cause a dust or mud and debris nuisance as a result of mismanagement of their vehicles will be discussed and advice will be sought from the Site Manger, if relevant.

If a complaint is made with respect to insects the Site Manager will investigate whether any of the activities at the Site could be the source of the nuisance.

If a complaint is made with respect to litter the Site Manager will arrange for litter pickers to clear up as appropriate and will assess whether further control measures will be required to ensure that the risk of recurrence is minimised. The details of the complaint will be recorded in the Site Diary and the complaints register (held on the Customer Services Management System (CSMS).

Any complaints relating to fugitive emissions and the actions taken will also be recorded in the Site Diary and copies of the incident reports (including those provided to the Environment Agency) retained on-site.

If a complaint is made with respect to vermin or an infestation is suspected, where normal treatment activities appear to be unsuccessful, the Site Manager will discuss and agree any further measures required with the pest control firm. The complaint reporting procedure will be followed as described below.

If a complaint is made with respect to noise or vibration the Site Manager will assess the cause of the complaint and will report the findings. If the noise or vibration leading to the complaint has been caused by a continuing operation, additional noise or vibration surveys may be required to confirm the degree of impact upon the receptor. The Site Manager will make any recommendations for further noise or vibration control to the Management Team and shall inform the Environment Agency of the complaint as soon as it is practicable to do so.

In the event that a complaint is made with respect to odour the Site Manager will investigate the source of the odour and take steps to reduce its impact. If the source appears to come from the Site then appropriate actions to reduce the odour will be taken.

6.6.1 Complaints investigation procedure

In the event of any complaint, this section deals with the complaint assessment procedures. The primary role of this assessment will be to ascertain whether the complaint is associated with any Site operations and what action should be taken to prevent or minimise the probability of a recurrence.

It is important that any person acting on behalf of Southern Water is appropriately trained and that all steps and decisions are documented.

Step 1 – Complaint received

The Site operator or Environment Agency receives a complaint regarding the STC. Details logged within the CSMS.

Step 2 – How to respond

Complainant is contacted to inform them the complaint has been received and request further information, where required.

The primary reasons for investigation of complaints are to identify the likely cause and source for the complaint and it is important to gather as much information about the complaint as possible. At the outset of any investigation, the Site Manager is to determine the priority for responding to the complaint.

If possible, someone from the Environment Agency will attend after a complaint has been made so that they can carry out an effective and subjective appraisal of the complaints and note any results into the CSMS.

Step 3 – Determine what to record and how

The complaint details and the investigation outcomes and actions taken are to be recorded in the CSMS. This information must be filled in on-site at the time of notification of the complaint.

Step 4 – Follow-up investigation

In order to resolve any problems successfully, it is essential to understand fully the source, reason and the operational conditions that led to the complaint. The first step in the investigation will be to select the most appropriate methodology for assessment. All the information collected should be filled in on the internal complaints form and a note made referencing this in the CSMS.

Step 5 – Communication with the complainant

The Site Manager or contractor tasked with addressing the complaint is responsible for collecting all the information and providing feedback to the complainant, or the Customer Contact Centre will contact the complainant. Wherever possible an explanation of the actions taken and the reasons for the decision should be made to the complainant.

If it is decided that there was no ground for the complaint this should be clearly explained to the complainant, along with information about what they should do, if they are unhappy with the response.

Step 6 – Monthly complaints records

A full report of the complaints logged within the CSMS is produced to present to the relevant Technician to allow a review of potential trends.

6.7 Question 3c: Types and amounts of raw materials

Details of raw materials is demonstrated in document reference 790101_MSD_ResidueMP_ASH December 2024.

6.8 Question 4: Monitoring

This section provides a summary of the proposed monitoring at the Site.

6.8.1 Emissions to air

Stack emissions monitoring will be undertaken for each stack in accordance with M5 monitoring guidance, MCERTS BS EN 14792 and the requirements of the environmental permit issued for the Site, where suitable and available.

Periodic monitoring is undertaken on an annual basis as part of the existing permit requirements. No secondary abatement technology is required, and continuous monitoring is not considered necessary. Sample monitoring will be carried out after each maintenance period on the CHPs and boilers, in order to ensure compliance with ELVs as required in the Environmental Permit.

Once permitted monitoring will be undertaken in accordance with the relevant standards. It is anticipated the monitoring standards required are as follows:

Table 6.6: Monitoring of air emissions

Emission point type	Parameter	Reference period	Monitoring frequency	Monitoring standard or method
Stacks on engines Burning biogas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	periodic over minimum 1-hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air
	Carbon monoxide			
	Total volatile organic compounds including methane			
Boilers (dual fuel)	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	periodic over minimum 1-hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air
Channelled emissions to air (biofilter and scrubbing system)	Ammonia	periodic over minimum 1-hour period	Once every 6 months, or more frequent if stated in the permit	Emissions of pollutants into the environment through any kind of duct, pipe, stack, etc
	H_2S			
	Odour concentration		Once every 6 months, or more frequent if stated in the permit	BS EN 13725
Flare	Operational hours	Recorded duration and frequency.	Continuous	Operational record including date, time and duration of use shall be recorded. (Environment Agency Guidance LFTGN 05)
Pressure relief valves	Biogas release and operational events	Recorded duration and frequency.	Daily inspection Maintenance Scheduled Task undertaken monthly	Operational record including date, time duration of pressure relief events

Emission point type	Parameter	Reference period	Monitoring frequency	Monitoring standard or method
				and calculated annual mass release

Southern Water acknowledges that the flare is appropriate for emergency use (such as breakdown and maintenance), records from monitoring will be reviewed regularly to reduce the use of the flare.

6.8.2 Assessment of the sampling locations

Southern Water will employ sub-contractors accredited to MCERTS to monitor the emissions points in accordance with the permit requirements, where suitable and available. An assessment of sampling locations is therefore not appropriate as this will be the responsibility of the sub-contractors. Where suitable and available, any monitoring, sampling and analysis of emissions to air or water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors.

6.8.2.1 Sampling locations and BS EN 15259

Southern Water does not believe the BS EN 15259 applies at the Site due to the diameter of circular ducts. Under Environment Agency's Method Implementation Document for EN 15259:20072, circular ducts with diameters <1.13m are not required to meet BS EN 15259.

6.8.3 Emissions to water (other than sewers)

There are no direct releases to controlled waters of emissions arising from the STC. As such, no monitoring or reporting is required.

6.8.4 Emissions to sewers, effluent treatment plants or other transfers off-site

The release of liquors from the sludge treatment process is considered to be a point source emissions or direct discharges to sewers, as part of the permit operation. The site layout plan, drawing reference 790101_MSD_SiteLayoutPlan_ASH December 2024, identifies the point at which liquors leave the site to enter the WTW at the inlet. A sampling location has also been identified on the site layout plan, although sampling will be undertaken as part of a wider implementation plan under BAT and IED.

There will be no point source emissions or direct discharges to controlled waters as part of the permit operation. Condensates discharge directly to the Site drainage system which diverts water to the head of the works of the adjacent Ashford WTW. The condensate from the CHP exhaust discharges to a container which is emptied at least fortnightly to the drainage system of the adjacent Ashford WTW and will undergo treatment through the works before being discharged under an existing environmental permit for discharge to water. No sampling is currently undertaken, but Southern Water is committed to ensuring that any sampling and chemical analysis will be undertaken in line with the relevant pollution risk assessment guidance or other applicable guidance such as MCERTS or ISO standards, where appropriate and available monitoring or reporting is required.

Southern Water confirm that they will undertake a chemical analysis of their wastewater, from the STC entering the adjacent Ashford WTW, which tests all pollutants they expect to find in the discharge to fully characterise the emissions to water. They propose a minimum of 12 sampling runs over a 12-month period (1 full sampling spec per month) initially to establish a baseline, in accordance with the surface water pollution risk assessment guidance or other applicable

guidance such as MCERTS or ISO standards, where appropriate. Southern Water will then take an informed viewpoint of the determinants the samples contain demonstrating those that are not in the sample. An H1 assessment to screen out any that are not applicable or relevant will be completed. Sampling and analysis will be undertaken using a UKAS accredited, or equivalent, laboratory. This commitment falls within the Implementation Plan for meeting BAT and IED compliance. An implementation plan is shown in document reference 790101_MSD_ImplementationPlan December 2023. It is therefore, considered that this will be added as Improvement Conditions to the permit.

6.8.5 Emissions to land

There are no direct releases to land of emissions arising from the STC. As required by the Southern Water EMS various housekeeping and waste management practices are in place to monitor waste emissions. These include segregation of wastes according to their classification and nature, labelling waste and using designated storage containers.

In accordance with the Southern Water EMS Policy, solid waste is disposed of in accordance with 'Duty of Care' Regulations. The composition of the waste, its hazard characteristics and any relevant precautions are clearly stated on the transfer notes provided to licensed waste contractors removing waste from the Site for recycling and/or disposal. Records are maintained on-site and will be reported to the regulator as required by the EPR permit.

6.9 Question 5: Environmental impact assessment

The proposal is not subject to an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment] (EIA).

6.10 Question 6: Resource efficiency and climate change

6.10.1 Basic energy requirements

Southern Water aims to maximise the efficiency of the energy flows from its processes ensuring that, where possible, heat is recovered, and energy is not wasted.

There are a number of pieces of infrastructure and equipment that use electrical energy supply including:

- Fans, coolers and heating;
- Motors and motor drivers and drive systems;
- Aeration
- Pumps / boosters/ conveyors;
- Facilities ‑ heating and lighting
- Sludge handling and management e.g. AD, dewatering and polymer dosing equipment;
- Ventilation and odour control/abatement systems

Biogas is used to provide energy, produced by burning in a CHP engine, for the Site's processes. Surplus energy from the CHP is exported to the Grid. Gas oil is used for running the boilers, where required.

6.10.2 Question 6a: Basic measures for improving energy efficiency

Biogas is a renewable gas, produced from organic waste and is reused on-site to power its energy requirements. A key objective of the Southern Water EMS is to reduce energy consumption from the grid. Southern Water have a specific Energy and Carbon Manual which contains objectives for the energy consumption. Southern Water recognise that target setting

for, and measurement of, energy and carbon reduction is pivotal to reducing energy use and carbon emissions in new and existing installations. Southern Water is currently in the process of better understanding economic levels of energy efficiency, renewable energy generation and carbon reduction (embodied and operational), which will help the company develop and set company and project level reduction targets.

Southern Water deals with the measurement and reporting of operational carbon emissions for existing installations through:

- Monitoring of energy use from electricity meters
- Annual estimation and reporting of operational carbon emissions for regulatory reporting (Southern Water Annual Report, Ofwat and SECR (Streamlined Energy & Carbon Reporting)
- ESOS audit reporting – the Energy Savings Opportunity Scheme (ESOS) is a regulatory requirement to undertake a company-wide audit of energy efficiency opportunities. This is approved by a Lead Assessor and completion is subsequently registered with the Environment Agency. Reporting is every four years. The last report was December 2019. The next one is due December 2023.

Energy efficiency measures implemented at the Site include (but not limited to) the following:

- The combustion temperature is optimised for reduced NOx emissions and increased efficiency.
- CHP engine is equipped with turbocharger, further increasing energy efficiency.
- Consideration of energy recovery and the deployment of renewable energy systems – opportunities relating to CHP, wind and solar power generation opportunities for the Site are currently being reviewed.
- The Field Performance Manager can request advice from the Optimisation Team to improve efficiency of plant if required.

Biogas is a renewable gas, produced from organic waste. Heat generated from the CHP is used in the AD process. The energy created by burning of biogas in the CHP engine is used to supply the Site to reduce the need to import electricity from the grid.

Southern Water carries out planned maintenance as a means to ensure operations are energy efficient. Overall, the energy use is relatively low and the purpose of the installation is to produce energy by supplying biogas, no further measures are identified at this stage to improve upon energy efficiency. Nevertheless, Southern Water will regularly review energy use and disclose potential opportunities to reduce energy consumption from the four-yearly (or more frequent) energy reviews as required by a varied permit. In addition, Southern Water implements optimisation measures across all its sites in a proactive approach to ensuring efficiency measures across all its Site operations meets optimal and efficient operating requirements.

6.10.3 Question 6b: Changes to the energy the permitted activities use up and create

There will not be any changes to the energy that the permitted activities use or create.

6.10.4 Question 6c: Climate change levy agreement

Southern Water is not a participant to the Climate Change Levy (CCL) agreement.

6.10.5 Question 6d: Raw and other materials, other substances and water use

Details of raw materials is demonstrated in document reference 790101_MSD_ResidueMP_ASH December 2024.

6.10.6 Question 6e: Reducing production of waste

Details of raw materials is demonstrated in document reference 790101_MSD_ResidueMP_ASH December 2024.

7 Part B6 – New bespoke water discharge activity or groundwater activity (point source discharge) or point source emission to water from an installation

The form responds to question listed in Table 1 of the B6 application form for the last listed option 'Effluent and/or contaminated surface water run - off arising from the operation of an installation.

Therefore, only the following questions have been responded to:

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Effluent and/or contaminated surface water run-off arising from the operation of an installation	No additional charge, as already included as part of the installation variation application charge	✔	a, b, d	c	b, c, d, f		a, b2	a, b, c	b, c, d, e, f, g	d*, e*, f	a, b, d, e, f, h, i	a, b, c

* Check the relevant question and our guidance notes on part C6 to see if you need to give an answer.

Note Question 6c is not within the application, despite being listed as being required by Table 1 of the application form.

7.1 Question 1 About the effluent

Effluent description: Return liquors from the STC process and condensate from the gas pipelines and gas storage bag.

Effluent name: STC return liquors.

7.2 Question 2 How long will you need to discharge for?

Start date: from date of IED permit issuance.

The discharge will not be time limited, will take place all year and continuously (e.g. for more than six day in any year)

7.3 Question 3 How much do you want to discharge?

Southern Water is not aware of the quantity of water sent to the inlet works from the STC because it is not currently monitored, therefore no details have been provided for Question 3. An implementation plan has been developed as part of the accompanying IED permit application.

7.4 Question 4 Intermittent sewage discharges

It is not possible to answer Q4a-o. These do not seem applicable to the process.

7.5 Question 5 Should your discharge be made to the foul sewer?

The discharge point (inlet works (emission point W1)) (document reference 790101_MSD_SiteLayoutPlan_ASH December 2023) is located within the operator's own

wastewater treatment works, therefore, the distance to the nearest foul sewer is 0m and response to Question 5b2 is not applicable.

7.6 Question 6 How will the effluent be treated?

Effluent is not treated before reaching the inlet works because once leaving the inlet works the effluent will be treated through the Wastewater Treatment Works. The process description is provided in Section 3. An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Ashford WTW.

7.7 Question 7 What will be in the effluent?

Southern Water is not aware of the composition of the effluent discharged to the inlet works from the STC because it is not currently monitored, therefore, no details have been provided for Question 7.

The temperature of effluent is not known, but since the water is not direct from processes, it is expected to be ambient.

An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Ashford WTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors as set out in Southern Water's commitment in section 6.8.4.

7.8 Question 8 Environmental risk assessments and modelling

Discharges to lakes, estuaries, coastal waters or bathing waters.

Southern Water is not aware of the composition of the effluent discharged to the inlet works from the Site because it is not currently monitored, therefore, screening cannot be undertaken at this time.

An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Ashford WTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors as set out in Southern Water's commitment in section 6.8.4.

7.9 Question 9 Monitoring arrangements

Effluent monitoring will be in line with permit conditions. An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will provided and Southern Water will identify how, and the final locations of where, it will monitor and how it characterise the liquors returning to the head of the adjacent Aylesford WwTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors, as set out in Southern Water's commitment in section 6.8.4.

7.10 Appendix 5 Discharges to non-tidal river, stream or canal

The discharge of secondary treated sewage effluent from the WTW is permitted under the permit reference A805.K.98, from Outlet 1 at TR 0250 4359 and Outlet 2 at TR 0229 4366, both within The Great Stour. For the purpose of this application, the discharge in Appendix 5 refers to Outlet 1 as this is the primary discharge from Ashford WTW. Outlet 2 is for settled storm sewage and, therefore, not applicable as it will not carry discharges from the anaerobic digestion installation.

8 Part F1 – Charges and declarations

8.1 Question 1: Working out charges

Table 1, Table 2 and Table 3 are completed on the Part F1 form.

The calculation is in accordance with the basic pre-application response (EPR/XP3801SV, dated 20 August 2020) and an email from Environment Agency's Katie Trevillion-Bell, dated 28 May 2021 (790101_MSD_FeeEmail_ASH). Katie advised a consolidation fee is not required in regard to the CHP permit (EPR/KP3736GS) and recommended submitting the request to consolidate this permit through the administrative change application form C0.5.

8.2 Question 3: Payment

Payment will be made by BACS.

8.3 Question 5: Confidentiality and National security

Southern Water does not wish to claim confidentiality with this application.

8.4 Question 6: Application checklist

Table 8.1 provides a list of section/document references included in the application.

Table 8.1: Part F1, Question 6, Table 4: Application checklist

Question reference	Document title	Documents reference
Part A – Q5c Part A – Appendix 1 Part C2 – Appendix 2	Details of Directors	790101_MSD_Directors February 2024
Part C2 – Q3a Part C2 – Appendix 2	List of Relevant Offences	790101_MSD_RelevantOffences February 2024
Part C2 – Q3b	Competency Management System Agreement	790101_MSD_CMS December 2023
Part C2 – Q3d	Environmental Management System Certificate	790101_MSD_EMS December 2023
Part C2 – Q5a Part C2.5 – Q4b Part E2 – Q3a	Site Location Plan	790101_MSDS_SiteLayoutPlan_ASH December 2024
	Site Layout Plan	
	Drainage Plan	790101_MSD_DrainagePlan_GASH July 2021
Part C2 – Q5b Part E2 – Q4a	Site Condition Report	790101_SCR_ASH December 2024
Part C2 – Q6	Environmental Risk Assessment	790101_MSD_ERA_ASH December 2024 790101_MSD_Maps_ASH December 2023
	Climate Change Risk Assessment	790101_ERA_CCRA_ASH
	Air Quality Dispersion Report	790101_MSD_AirQualityDispersionReport_ASH February 2024
Part C2.5 – Q2	Air Quality Risk Assessment	790101_CombustionPlant_ASH December 2024
Part B4 – Q1b Part C3 – Q1b Part C4 – Q1b	Waste Codes	Appendix A of 790101_MSD_ASH December 2024
	Annual throughput data	790101_AnnualThroughput_ASH Deember 2024
	Waste Transfer Notes	790101_MSD_WasteTransferNotes_ASH December 2024
Part C3 – Q3a Part C3 – Q3c Part C4 – Q3a	Schematics/Process flow diagram	790101_MSD_Schematics_ASH December 2024
	BAT Analysis	790101_MSD_BAT_ASH December 2024
	Implementation Plan	790101_MSD_Implementation Plan December 2023

Question reference	Document title	Documents reference
	Leak detection and repair Plan	790101_MSD_LDAR_ASH December 2023
	Residues Management Plan	790101_MSD_ResidueMP_ASH December 2024
	Accident Management Plan	790101_MSD_AMP_ASH December 2023
	Duty of care (waste acceptance)	790101_WasteAcceptance_ASH December 2024
Part B4 – Q3b Part C3 – Q3b Part C4 – Q3b	Odour Management Plan	790101_ERA_OdourMP_ASH December 2024
	Bioaerosol Risk Assessment	790101_ERA_BioRA_ASH December 2023
Part B4 – Q4a	Monitoring	790101_Sampling proposal_ASH December 2024
Part C3 – Q3c, Table 5	Materials Safety Data Sheets	790101_MSD_MSDS_ASH December 2023
Part A – Q7 Part B4 – Q1,2,3 Part C2 – Q2,3,5,6 Part C2.5 – Q3,4 Part C3 – Q1,2,3,4,6 Part C4 – Q1,2,3,4 Part F1 – Q1,2,6	Main Supporting Document	790101_MSD_Main_ASH December 2024

A. Waste codes

A.1 Wastes imported for Anaerobic Digestion

It is requested that the annual quantity of indigenous sludge and liquid sludge imports to be accepted is 608,034m^3.

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**			
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)	AD/Cake Bay	Indigenous/ Imported	
19 08	**wastes from waste water treatment plants not otherwise specified**			
19 08 05	sludges from treating urban wastewater	AD	Indigenous/ Imported	

A.2 Wastes received under the Controlled Waste Regulations 2012*

*Southern Water acknowledge these waste codes will not be included in the permit

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
20 03	**Other municipal wastes**			
20 03 04	septic tank sludge	Head of works	Imported	
20 03 06	waste from sewage cleaning	Head of works	Imported	

A.3 Wastes to import under a waste activity permit

It is requested that the annual quantity of imported waste to the head of the works to be accepted is 150,000m^3

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
16 10	**aqueous liquid wastes defined for off-site treatment**			
16 10 02[7]	aqueous liquid wastes other than those mentioned in 16 10 01; Cesspool waste and other sewage sludge only; Cess pool liquor	AD/Head of works	Imported	The waste for this code will be cess as currently accepted under permit

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