MOTT MACDONALD

IED Permit Application
Main Supporting Document

Afan Sludge Treatment Centre

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Issue and Revision Record

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06	27/01/2025	Amelia Luk	Shannon Stone	Anita Manns	Amended based on NRW initial feedback

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Contents

Tables

1 Executive summary

1.1 Overview of site and activities

Afan Wastewater Treatment Works (WwTW) and Sludge Treatment Centre (STC) is located within Port Talbot, adjacent to the Bristol Channel. The address for the site is Afan WwTW, Phoenix Wharf, Harbour Road, Port Talbot, SA13 1RA (NGR SS 76061 87329).

The WwTW is operated under the Urban Wastewater Treatment Regulations (UWwTR) and has a standalone Water Discharge Activity Environmental Permit. This will remain an independent permitted activity.

The site currently has one Environmental Permit in operation. The existing Combined Heat and Power (CHP) is a non-hazardous waste activity which is currently carried out under a waste operation permit EPR/ZP3032KQ. The existing STC activities and infrastructure on site are not currently permitted and will be added as part of the variation. The waste activities at the site 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. The Site undertakes AD of sewage sludge from the on-site WwTW only. The site will continue this operation under a bespoke Industrial Emissions Directive (IED) Installation Environmental Permit.

Dŵr Cymru Cyfyngedig (referred to as Dwr Cymru Welsh Water (DCWW) ('the Operator')) is applying to vary Permit EPR/ZP3032KQ in order to satisfy the requirements of the Industrial Emissions Directive (IED) and Environmental Permitting Regulations (EPR) 2016.

The primary permitted installation activity will be the AD treatment Site. The AD Site will treat indigenously produced and imported sludges. Permitted Directly Associated Activities (DAAs) will be:

- Physio-chemical treatment of indigenously produced sludges.
- Storage of indigenously produced sludges and the sludge cake from the AD Site.
- Storage of biogas derived from the AD treatment of waste.
- Combustion of biogas in an on-site CHPs and boilers as per EPR/ZP3032KQ.
- Combustion of excess biogas via an on-site flare stack.

The imported cake will be processed through the AD plant. The sludge cake will be exported for use as a fertiliser.

1.2 Overview of the STC process

Imported sludge cake is delivered to the site by road and is received into the cake import centre, which comprises 2 No. enclosed hoppers, both of which are extracted to Odour Control System 1 (OCU1). The imported cake is then transferred to the Thermal Hydrolysis Plant (THP) feed silo where it combines with indigenous sludge cake previously held within the indigenous sludge cake silo. Both the indigenous and THP feed silos are also extracted to OCU 1.

The mixed sludge cake within the THP feed silo is then conveyed through the THP, which is a sealed process consisting of a pulper, 4 no. reactor tanks and a flash tank. After thermal hydrolysis, the sludge is pumped into 2 No. anaerobic digestors and digested for a period of 10 to 14 days. The digested sludge is then pumped to an open aerated digested sludge holding tank prior to dewatering.

Dewatering is provided by 4 No. belt presses housed within the post THP belt press building, and the resultant dewatered sludge cake is discharged into 4 No. cake bays prior to transfer to the main cake pad. The cake is then periodically exported off site by road trailer. Each of the belt presses and the cake bays are extracted to OCU2. The cake storage pad is also fitted with a roof.

Biogas generated from the wet Anaerobic Digestion process is stored in 2 No. dual membrane gas storage bags. The biogas is then transferred to the Combined Heat and Power (CHP) Engines where it is combusted in 2 No. spark ignition engines with a rated thermal input of 3.745 MWth each. The CHP engines are used to generate electricity via an alternator and heat via the engine exhaust and cooling jacket. Electricity produced is used by the WwTW with any surplus transferred to the distribution network.

High grade heat is recovered from the CHP engine exhaust and used to generate low pressure steam, whilst low grade heat from the cooling jacket is used to generate hot water for reuse in the Advanced Digestion process. Additional heat demand is met by 2 No. supplementary fired waste heat boilers (3.9 MWth each).

The biogas is treated prior to combustion by a dedicated Siloxane removal unit which regenerates daily for 4 No. hours starting at midnight. Emissions from the filter are discharged via a stack.

A high temperature waste gas burner is also available to flare off excess biogas.

Table 1.1 provides details of the combustion plan at Afan STC.

Table 1.1: Combustion Plant Details

	CHP 1	CHP 2	Boiler 1	Boiler 2
Emission Point (number)	A1	A2	A3	A4
Source	CHP engine stack	CHP engine stack	Boiler stack	Boiler stack
Date that MCP became operational/was commissioned	2011	2011	2011	2011
Thermal input (MWth)	3.75	3.75	3.9	3.9
Stack height (m)	24	24	24	24
Fuel used (biogas, diesel etc)	Biogas	Biogas	Biogas/ natural gas	Biogas/ natural gas
Estimated total hours of operation per year	6635	5288	40.5	40.5
MCPD and SG Regs status	Existing MCP Tranche A SGs	Existing MCP Tranche A SGs	Existing MCP	Existing MCP

The Afan IED permit will include:

- 2 No. Digesters (4250m^3 each)
- 1 No. Post digested sludge storage tank (PDST) (500m^3)
- 1 No. Gas bag holder (2000m^3)
- 1 No. Indigenous sludge silo (100m^3)
- 1 No. Thermal Hydrolysis Plant (THP) feed silo (600m^3)
- 1 No. THP comprising:

  - 1 No. Pulper (42m^3)
  - 4 No. Reactors (13m^3 each) and
  - 1 No. Flash Tank (42m^3)
- 2 No. Imported cake silo (40m^3 each)
- 2 No. Centrifuges for indigenous SAS only (pre-digestion)
- 3 No. belt presses (post-digestion)
- 2 No. Odour Control Units (OCU) 1 No OCU for the raw sludge silos in the import area and 1 No. OCU for the belt press room
- 1 No. Cake barn (with 3 No. cake bays, 4-day retention approx. 450m^3 total cake bay storage capacity, covered by barn)
- 2 No. Boilers (input of 3.9MWth each)
- 2 No. CHP engines (thermal rated input of 3.745MWth each)
- 1 No. Biogas flare stack (1,500m^3/hr max)

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	Afan STC	
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	How to Comply with Your Environmental Permit Additional Guidance for Anaerobic Digestion Best available techniques (BAT) conclusions, for the recovery and disposal of hazardous and non-hazardous waste (SGN S5.06)	https://www.wiseenvironment.co.uk/wp-content/uploads/2020/07/ How-to-Comply-with-Your-Environmental-Permit-Additional-Guidance-for-Anaerobic-Digestion.pdfhttp://eippcb.jrc.ec.europa.eu/reference/BREF/BATC_CWW.pdf https://www.gov.uk/government/publications/sector-guidancenote-s506-recovery-anddisposal-of-hazardous-and-nonhazardous-waste
General	How to comply with your environmental permit Monitoring stack emissions: technical guidance for selecting a monitoring approach M1 sampling requirements for stack emission monitoring Environmental permitting guidance, including: NRW's horizontal environmental permitting guidance, including: H1 - Risk assessments for your environmental permit H2 Energy efficiency (Energy efficiency for combustion and energy from waste power plants)	https://cdn.cyfoethnaturiol.cymru/media/2110/how-to-comply-with-your-environmental-permit.pdf?mode=pad&rnd=131467604540000000 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/government/publications/energy-efficiencyfor-

Installation name	Afan STC	
	H3 Noise assessment and control H4 Odour management H5 Site condition report Control and monitor emissions for your environmental permit	combustion-and-energyfrom-waste-power-plants https://www.gov.uk/government/publications/environmentalpermitting-h3-part-2-noiseassessment-and-control https://www.gov.uk/government/publications/environmentalpermitting-h4-odourmanagement https://cdn.cyfoethnaturiol.cymru/media/1213/site-condition-report-template.pdf?mode=pad&rnd=130989730490000000 https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

2 Introduction

2.1 Overview

This document has been prepared to support the application to vary the existing bespoke Environmental Permit to an Installation Environmental Permit (hereafter referred to as 'the Permit'), EPR/ZP3032KQ, for the Afan Sludge Treatment Centre (STC) ('the Site') on behalf of Dŵr Cymru Cyfyngedig (referred to as Dwr Cymru Welsh Water (DCWW) ('the Operator')).

Following the joint NRW/Environment Agency and 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 Directly Associated Activities (DAAs), an assessment of the possible effects of these activities and responses to questions in Parts A, C2, C3 and F1 of the application documentation (plus supporting information where required). Completed forms Part A, C2, C3 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 (100123523_PartA_AFA September 2024)
- Part C2: Variation to bespoke permit (100123523_PartC2_AFA September 2024)
- Part C3: Variation to installation permit (100123523_PartC3_AFA September 2024)
- Part F1: Charges and declarations (100123523_PartF1_AFA September 2024)

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 C3 and Part F1 application forms for which there was insufficient space on the forms to answer the questions in full.

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

- Chapter 5 provides the general information required to inform Form C2 relating to a new bespoke installation permit; and
- Chapter 6 provides the more detailed information required to inform Form C3 relating to a new bespoke installation permit.

Form 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 appendices:

- Appendix A – European Waste Catalogue (EWC) Codes

3 Process Description

Indigenous secondary activated sludge (SAS) is transferred from 1 No. 400m^3 SAS tank (not covered under this permit as is part of the WwTW) – pre-digestion) to 2 No. centrifuges, where the first dose of polymer is added. The thickened sludge is then pumped into 1 No. 100m^3 indigenous cake silo where it is pumped into 1 No. 600m^3 THP feed silo. The THP feed silo also receives thickened sludge cake from 2 No 40m^3 imported cake silos/hoppers. From the THP feed silo, sludge is pumped into 1 No THP travelling through 1 No. 42m^3 pulper where it is heated to 100ºC with steam. The sludge is then fed to 1 of 4 No. 13m^3 reactors, Steam is injected into the reactor to increase pressure and temperature to approximately 6 barG and 165ºC, the steam pressure in the reactor is maintained for 20-30 minutes. The sludge then enters 1 No. 42m^3 flash tank, where the temperature is decreased to 100°C. The THP conditions the sludge using pressurised steam. Steam condensate and gases are either recaptured back into the THP process or captured in the foul gas drum and discharged into the digester. Treated sludge from the flash tank is diluted to 10%DS using disinfected final effluent at ambient temperature and pumped through two coolers, where it is cooled to approximately 40C before entering the 2 No. 4250m^3 digesters (retention time minimum 13 days).

After the minimum retention time, the sludge is transferred via gravity into the PDST. From here is it pumped up to 3 No. belt presses. Polymer is added to the sludge stream prior to entering the belt press. Digested sludge is dewatered to 26 – 30% dry solids before being transferred to 1 No cake barn (consisting of 3 bays) and left to mature for 4 days. After which time is it taken away to be spread to land or quarantined off-site if it has not met the required pathogen limits.

The biogas generated during digestion is stored in 1 No. 2000m^3 double membrane gas holder. The gas is then passed through a siloxane removal plant which regenerates daily for 4 No. hours starting at midnight. Emissions from the filter are discharged via a 4m stack. The biogas is used in 2 No. CHP engines for electricity generation, which supplies the digestion plant and for recovering heat, to maintain digester temperature. The Site has 2 No. boilers (one for each CHP) which are dual fuel. Any excess biogas is flared off via the on-site waste biogas burner (flare stack) during CHP downtime or emergencies which impact on the use of the CHPs.

CHP engines are fitted with engine jacket which is filled with water to cool the engine. The heat from the engine jacket water is then transferred to the hot water system, and used mainly to pre‑heat dilution water for pre-hydrolysis stages, and pre-heat boiler feed water. Other uses of the low temperature heat include heating service water (disinfected final effluent) for the belt presses polymer system, and heating the buildings.

A portion of final effluent from the works is used in the sludge treatment plant to replace the need for potable water. The required amount of final effluent is pumped through a set of duty/ standby 300µm filters to reduce suspended solids contents before reusing it as cooling water for sludge coolers to cool hydrolysed sludge. Heated final effluent, returned from sludge coolers, is sent to the following places: (1) undisinfected final effluent tank, (2) passed through UV reactors to a disinfected final effluent tank and (3) final effluent outfall chamber.

Contents from the undisinfected final effluent tank (capacity of 5m^3) are reused as (1) dilution water for pre‑hydrolysis process (pre‑heated using LTHW/FE heat exchangers), and (2) irrigation water for odour control unit No.1 and No.2.

Heated final effluent used to produce disinfected final effluent is filtered to 100µm before passing through UV reactors for disinfection. A pair of duty/duty UV reactors is installed to kill the bacteria in the final effluent to produce disinfected final effluent with a total coliform concentration of less than 100mpn/100ml (95%percentile). The disinfected final effluent is then

stored in a 5m^3 disinfected final effluent tank and used in (1) belt press washwater system, (2) belt press polymer make - up and carrier water system, (3) post hydrolysis dilution, (4) foul gas cooler, and (5) wash down hoses.

All sludge treatment activities are undertaken in enclosed buildings or tanks. The site also has two odour control units (OCUs) to mitigate the risk of odour. One extracts from the cake import hopper, the indigenous cake silo, the THP feed silo and the centrifuges using a carbon filter system. The other which extracts odorous air from the belt press and cake bays and comprises a sulphuric acid scrubber. Media life and condition is reviewed on a regular basis although it is anticipated that media should last a minimum of two years.

All condensate from the CHP exhausts, flare stacks and biogas along with any other liquid waste or effluent will be discharged to the liquor return well and back to the adjacent Afan WwTW and will undergo treatment through the works before being discharged under an existing water discharge permit.

Refer to 100123523_MSD_ProcessFlow_AFA September 2024 for a schematic of the sludge treatment process and for the 100123523_SiteLayoutPlan_AFA September 2024 for the Site layout and location of the sludge treatment assets.

The IED permit includes the following assets:

- 2 No. Digesters (4250m^3 each)
- 1 No. Post digested sludge storage tank (PDST) (500m^3)
- 1 No. Gas bag holder (2000m^3)
- 1 No. Indigenous sludge silo (100m^3)
- 1 No. Thermal Hydrolysis Plant (THP) feed silo (600m^3)
- 1 No. THP (comprising 1 No. flash tank 42m^3, 1 No. pulper 42m^3 and 4 No. reactors 13m^3 each)
- 2 No. Imported cake silo (40m^3 each)
- 2 No. Centrifuges
- 3 No. Sludge thickeners (belt presses)
- 2 No. Odour Control Units (1 No OCU for the raw sludge silos in the import area and 1 No. OCU for the belt press room)
- 1 No. Cake barn (with 3 No. cake bays, 4-day retention time, approx. 450m^3 total cake bay storage capacity, covered by barn)
- 2 No. Boilers (input of 3.9MWth each)
- 2 No. CHP (input of 3.745MWth each)
- 1 No. Biogas flare stack (1,500m^3/hr max)

The Site includes 2 No. CHP units and 2 No. dual fuel boilers, operating since 2011, these are permitted under EPR/ZP3032KQ. The CHP units have an input of 3.745MWth each, and the boilers have an input of 3.9MWth each. Therefore, the Site falls within the scope of the Medium Combustion Plant Directive (MCPD) since the thermal rated inputs are both greater than 1MWth. The CHP unit and boilers will not be required to meet MCPD requirements until 2030 because they are each existing medium combustion plants (MCP).

4 Part A – About you

4.1 Question 7: Contact details

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

Name: Claire Cowdrey

Address: Mott MacDonald, Floor 4, Mountbatten House, Grosvenor Square, Southampton, SO15 2JU.

Phone number: 023 8062 8523

Email: claire.cowdrey@mottmac.com

5 Part C2 – General – Varying a bespoke permit

5.1 Question 2 - Table 1: Changes to existing activities

This application is to vary the existing Combined Heat and Power Facility permit as authorised under the permit reference EPR/ZP3032KQ, to add the scheduled activity S5.4 for Anaerobic Digestion, including DAA's, to the same permit.

5.2 Questions 3a: Relevant offences

Details of the relevant convictions are provided in the document reference 100123523_MSD_RelevantOffences_AFA September 2024.

5.3 Questions 3b: Technical ability

DCWW have relevant technical competence to operate the activities at the Site in the form of an accredited Competency Management System. See document reference 100123523_MSD_CMS_AFA September 2024 for evidence of certification.

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.

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.

All DCWW Wastewater Treatment Works Operators are put through rigorous training to ensure competence for the role. Initially all operatives will complete a Level 2 Wastewater Treatment Processes Programme which is 9-days' duration. This consists of units from the Certification and Assessment Board for the Water Industry (CABWI) Diploma in Water Engineering with written assessments and covers all basic aspects of the wastewater process. Six to twelve months later, the Operators will complete the Level 3 Competent Operator Programme.

An "Advanced Digestion – Technical Operator" Knowledge and Skills Framework has been developed to identify all the relevant training required for the role. Through monthly one to ones with line managers and the annual Performance Management Review Process it is ensured that operations staff can demonstrate the knowledge and skills identified or are put forward for further training to develop the competency, if needed.

DCWW operates under an accredited Competency Management System under the Competent Operator Scheme to replace the need to have WAMITAB qualified staff to cover the technical

competent management requirements. The Scheme will develop technical competency courses and skills to demonstrate that personnel have the appropriate technical skills and knowledge to manage the activities undertaken. This was independently certificated and has been audited, through a third-party certification body (currently identified as LRQA) to ensure it meets the requirements of the Version 5 Competence Management System Standard, developed by Energy & Utility Skills. The Competence Management System (CMS) will enable Operators to demonstrate technically competent management on the basis of corporate competence and employees' individual competence. Individual competence remains a key component with each employee having the relevant technical competences required to carry out their role.

The certificate issued by LRQA in March 2023 verifying the accreditation of the CMS is presented in 100123523_MSD_CMS_AFA September 2024.

5.4 Questions 3c: Finances

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

5.5 Question 3d: Management System

DCWW have an Environmental Management System (EMS) Policy. In line with the EMS Policy, the Afan STC will be operated in accordance with the DCWW Quality Management System (IMS) EMS. The IMS was last audited in February 2017 and passed with no non-conformities.

DCWW have established and maintained documentation that defines and describes how the IMS is established, implemented, and maintained in accordance with ISO 9001:2008 and ISO/IEC 17025:2005 and monitoring emissions to air, land and water (MCERTS) Standards.

The system is structured on the organisation's strategic business areas, business processes and customer requirements.

The EMS is not integrated with the IMS at present. However, certain system procedures and operating procedures are shared by both systems.

Demonstrable procedures are outlined in the DCWW Environmental Policy dates April 2020 and the Site Operating Manual and IMS.

The EMS addresses 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

An overall review of the IMS takes place every 12 months, and on other occasions as required, by senior management. There is a regular programme of audits covering all aspects of the IMS and EMS; they are included on the Internal Audit Programme operated by the Business Assurance team and audited by Natural Resources Wales on a frequent basis. In addition, the EMS and IMS are subject to audit by the inspection and certification company SGS (for accreditation purposes) every six months.

DCWW produces an annual report on environmental performance and where required attend local action group meetings.

One of the key tasks for DCWW during the permit determination process is the development of the management system arrangements for the STC Site to cover all STC operations as well as the quality and environmental aspects.

In 2020 the DCWW updated their Asset Management Policy Statement, Environmental Policy Statement, Health Safety and Wellbeing Policy Statement, Information Security Policy Statement, and Quality Policy Statement.

An accident management plan for the Site has been produced, document reference 100123523_AMP_AFA September 2024.

The Abnormal Results Escalation Procedure for the AD plant is provided in Appendix B.

5.5.1 Complaints

All written complaints are covered by the Quality Manual QM(1) 01 and handled according to procedures (DG7 Process Reports). The implementation of the complaints procedure is detailed in CC(3) series procedures. Compliance with these procedures is part of the overall assessment of DCWW's performance by OFWAT and there are penalties for poor performance. Telephone complaints are logged onto the DCWW SAP system and actions recorded by the DCWW operation and control centre (Linea). All complaints are analysed for root cause in order to prevent recurrence of the problem and assist with continuous improvement processes.

Complaints about pollution are dealt with the NO(03) 3 series procedures, and there are different procedures according to who reports the pollution. Pollutions may be reported via a number of routes including: general public, local authority, internally, contractor or formally via the Natural Resources Wales. All pollution incident calls, or emails are input into DCWWs online control system (SAP) by a Pollution Incident Advisor (PIA). This is then sent to the Wastewater Scheduling Team who allocates a Network Crew or contractor to respond to the incident; they have four hours to respond. After attending the incident, the operational crew provide feedback via SAP; the pollution incident details along with remedial actions taken or required are also verbally communicated to the Responsible Officer (RO). The SAP incident remains open until all follow-up work has been completed.

Following each incident, the relevant Pollution technician/Environmental Performance Officer reviews the findings and investigates details of the incident. If the root cause of the incident is identified the appropriate remedial action is undertaken and the job is closed on SAP. If the root cause is not obvious, an enhanced investigation is instigated, and the findings reviewed for appropriate remedial action. Every category 1 and 2 pollution incidents are formally reviewed by the Head of Wastewater (Network).

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, location and emissions plan - 100123523_SiteLayoutPlan_AFA September 2024
- Drainage plan - 100123523_DrainagePlan_AFA September 2024
- Schematics - 100123523_ProcessFlow_AFA September 2024

5.7 Question 5b and 5c: Site condition report

In accordance with NRW 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 4 of the NRW template[1]):

- Site details;
- Condition of the land at permit issue;
- Permitted activities; and,
- Changes to the activity.

A copy of the SCR can be found as document reference 100123523_SCR_AFA September 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 EPR Guidance (H1)[2].

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;
- 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); and
- 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 100123523_ERA_AFA January 2025. Constraints maps have been provided to demonstrate human receptors to a radius of 2km, as shown in document reference 100123523_ConstraintsMaps_AFA September 2024.

[1] Natural Resources Wales (2014). Environmental permitting: H5 Site condition report. Available online at: https://cdn.cyfoethnaturiol.cymru/media/1213/site-condition-report-template.pdf?mode=pad&rnd=130989730490000000

[2] Environment Agency (2023) Risk assessments for your environmental permit. Available online at: https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

6 Part C3 – Variation to a bespoke installation permit

6.1 Question 1a: Activities applied for

Table 6.1: 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
Afan STC	S5.4, Part A (1), (b) and (i)	Anaerobic digestion	448 wet tonnes per day	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 R1 to R12.	0	448 wet tonnes per day
Directly associated activities						
	Physical treatment of waste, including THP, dewatering and thickening of sludges	Recycling/ reclamation of organic substances which are not used as solvents.		R3		
	Waste reception	Import of sludge from satellite sites		R3		
	Biogas carbon filter	Clean up of biogas prior to combustion		R1		
	Use of biogas in CHPs x 2	Use principally as a fuel or other means to generate energy (CHP units, as per EPR/ZP3032KQ)		R1		
	Standby boilers x 2	For supplementary firing. As per EPR/ZP3032KQ		D10		
	Operation of a biogas flare	As per EPR/ZP3032KQ		D10		

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
	Use of pressure release valves	Release of pressure from digesters and PDSTs				
	Storage including liquid sludges and dewatered cake	Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the Site where it is produced).		R13		
	Raw material storage	Storage of raw materials including (but not limited to) chemicals, lubrication oil, diesel, activated carbon etc see table 6.6		R05		
	Discharge of condensate	Condensate from the CHP exhaust, flare gas pipelines, gas storage bag. From collection to the point of discharge at the adjacent WwTW.				
	Surface water drainage	Discharge of site surface water to Afan WwTW				
	Water treatment and conditioning	Boiler water treatment and conditioning, from receipt of raw materials to discharge of effluent to Afan WwTW				
	Odour control	Controlling channelled emissions to air				

Table 6.2: Details of installations

For installations that take waste	Total storage capacity	43m^3 x 2 tanks (imported cake silo) 600m^3 x 1 tank (THP Feed Silo) 42m^3 x 1 tank (THP) 4250m^3 x 2 tanks (digesters) 500m^3 x 1 tank (digested sludge holding tank) Total volume 9,728m^3 available on site
	Annual throughput	The combined annual throughput for Afan STC is 438,000 wet tonnes (21,900 TDS) (Based on total digester capacity @5%)

This application is to vary the existing Combined Heat and Power Facility permit as authorised under the permit reference EPR/ZP3032KQ, to add the scheduled activity S5.4 for Anaerobic Digestion, including DAA's, to the same permit.

6.2 Question 1b: Types of wastes accepted

Appendix A lists the waste types to be accepted. The combined annual throughput for Afan STC is of 438,000 wet tonnes. A waste acceptance procedure is presented for the site in 100123523_WasteAcceptance_AFA September 2024.

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

6.3.1 Emissions to air

Table 6.3: Emissions to air

Emission point reference and location	Source	Parameter	Quantity	Unit
CHP 1 (SS 7612 8734)/ A1 As per EPR/ZP3032KQ	CHP engine exhaust stack burning biogas	Oxides of Nitrogen (as NO_2)	500	mg/Nm^3
		Carbon Monoxide	1400	mg/Nm^3
		Sulphur Dioxide	339	mg/Nm^3
CHP 2 (SS 7612 8735)/ A2 As per EPR/ZP3032KQ	CHP engine exhaust stack burning biogas	Oxides of Nitrogen (as NO_2)	500	mg/Nm^3
		Carbon Monoxide	1400	mg/Nm^3
		Sulphur Dioxide	339	mg/Nm^3
Biogas flare stack (SS 7607 8730)/A5	Waste biogas burner (flare stack)	Oxides of Nitrogen (as NO_2)	150	mg/Nm^3
		Carbon Monoxide	50	mg/Nm^3
		Sulphur Dioxide	339	mg/Nm^3
Boiler Unit 1 (SS 7612 8734)/A3 As per EPR/ZP3032KQ	Boiler exhaust stack – operating on Biogas, oil and diesel.	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	170	mg/Nm^3
		Carbon Monoxide	75	mg/Nm^3
		Sulphur Dioxide	160	mg/Nm^3
Boiler for CHP Unit 2 (SS 7612 8735)/A4 As per EPR/ZP3032KQ	Boiler exhaust stack – operating on Biogas, oil and diesel.	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	170	mg/Nm^3
		Carbon Monoxide	75	mg/Nm^3
		Sulphur Dioxide	160	mg/Nm^3
Odour control unit (SS 7617 8735)/A8	Channelled emissions to air as identified on site plan. Use of carbon filer.	Ammonia	20	Mg/m^3
		H_2S	No limit specified	
		Odour concentration	1000	Oue/Nm^3
Odour control unit (SS 7616 8735)/A9	Channelled emissions to air as identified on site plan. sulphuric acid scrubber.	Ammonia	20	Mg/m^3
		H_2S	No limit specified	
		Odour concentration	1000	Oue/Nm^3
Pressure relief valves – Digester No.1 (SS 76098 87280)/A6	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limits set	
Pressure relief valves – Digester No.2 (SS 76120 87291)/A7	Biogas release and operational events	Operational hours Recorded duration and frequency.	No limits set	

The emission points are shown in drawing reference 100123523_SiteLayoutPlan_AFA September 2024.

6.3.2 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 will be no direct discharge of wastewater to controlled waters.

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. All spillages are recorded in the site diary including actions taken.

6.3.3 Emissions to sewers, effluent treatment plants or other transfers off Site

All condensate from the CHP exhausts, flare stacks and biogas along with any other liquid waste will be discharged to the liquor return well and back to the adjacent Afan WwTW and will undergo treatment through the works before being discharged under an existing water discharge permit. The liquors from the STC to the WwTW is not currently tested to know the full wastewater inventory (as required for BAT 2), and therefore the mean and variability of parameters is unknown. DCWW are committed to implement a monitoring programme to produce an inventory of the waste water streams. It is therefore, considered that this will be added as Improvement Conditions to the permit.

On-site WwTW 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 WwTW.

On-site WwTW 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 of captured and rerouted to the adjacent WwTW.

All drainage (surface water or foul water) will be captured by the on-site drainage system and returned to the head of the WwTW. A drainage plan of the Site is provided with the application, document reference 100123523_DrainagePlan_AFA September 2024.

The attached Process and Instrumentation Diagram provides the information relating to the sources of waste waters to the liquor return well. This is presented in process drawing ‘SWK-53154-SLT-PID-09001 RETURN LIQUORS PUMPING STATION AREA_09’ of the Process and Instrumentation Diagram (doc ref 100123523_AFA PIDS zone 9 liquor returns well).

The Combined Services Plan (drawing ref SWK-53154-SLT-CIV-00046, found in 100123523_DrainagePlan_AFA_September 2024) presents the drainage from the returns liquor well to the SBR pumping station for clarification.

The stormwater drainage of potentially contaminated areas from within the Site boundary will be routed back to the head of the works. Digestate and effluent from the STC are returned to the process downstream of storm separation. Returns come in downstream overflow and flow cannot physically escape down the storm route. The digestate and effluent must pass through treatment before going out to the environment.

Liquors will be tested according to BAT. Sampling and analysis will be undertaken using MCERTS accredited laboratories, where available.

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 WwTW 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 6.4.

Table 6.4: Point source emissions to sewers, effluent treatment plants or other transfers

Emission point reference	Source	Characteristics	Frequency	Monitoring / mitigation measures prior to final discharge and emission point discharge.
Discharged to Afan WwTW) SG 76069 87354	Condensate from the gas pipelines and gas storage bag	Condensate with slightly elevated levels of H_2S dissolved from the biogas, resulting in a low level of acidity	Negligible	Rerouted to adjacent WwTW.
Discharged to Afan WwTW SG 76069 87354	Boiler blow down to minimise damage from high mineral content water.	High purity water with traces of chemicals (used for boiler dosing).	Infrequent and negligible	Rerouted to adjacent WwTW.
Discharged to Afan WwTW) SG 76069 87354	Drain down of plant - 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).	Infrequent	Rerouted to adjacent WwTW.
Discharged to Afan WwTW) SG 76069 87354	Rainwater - Uncontaminated roof water from buildings.	Clean rainwater from building roofs only.		Rerouted to adjacent WwTW.
Discharged to Afan WwTW) SG 76069 87354	Rainwater - Run off from impervious surfaces	Clean rainwater from runoff		Rerouted to adjacent WwTW
Discharged to Afan WwTW) SG 76069 87354	Sanitary Water -Domestic facilities.	Foul waste.	Negligible	Rerouted to adjacent WwTW.
Washwater SG 76069 87354	From the washing down of mechanical equipment during maintenance activities	Variable.	Negligible	Rerouted to adjacent WWTW.
Liquor returns well SG 76069 87354	Process liquors from STC	Liquors from centrifuge, belt presses etc processes		Rerouted to adjacent WWTW.

Please refer to the ERA (doc ref 100123523_ERA_AFA January 2025) on the environmental risk the water emissions pose and how these are mitigated, where relevant.

6.3.4 Emissions to land

There will be no point source emissions to land as part of the activities carried out on-site.

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 100123523_ERA_AFA January 2025) for the environmental risk the water emissions pose and how these are mitigated, where relevant.

6.4 Question 3: 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 6.5 lists the technical guidance notes (TGNs) used to inform the techniques and measures proposed. A leak detection and repair plan is also provided as an associated document (reference 100123523_LDAR_AFA September 2024).

The technical guidance and BAT requirements will also be addressed within DCWW Afan 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 3: Technical standards

Installation name	Afan STC	
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	How to Comply with Your Environmental Permit Additional Guidance for Anaerobic Digestion Best available techniques (BAT) conclusions, for the recovery and disposal of hazardous and non-hazardous waste (SGN S5.06)	https://www.wiseenvironment.co.uk/wp-content/uploads/2020/07/ How-to-Comply-with-Your-Environmental-Permit-Additional-Guidance-for-Anaerobic-Digestion.pdfhttp://eippcb.jrc.ec.europa.eu/reference/BREF/BATC_CWW.pdf https://www.gov.uk/government/publications/sector-guidancenote-s506-recovery-anddisposal-of-hazardous-and-nonhazardous-waste
General	How to comply with your environmental permit Monitoring stack emissions: technical guidance for selecting a monitoring approach M1 sampling requirements for stack emission monitoring Environmental permitting guidance, including: NRW's horizontal environmental permitting guidance, including: H1 - Risk assessments for your environmental permit	https://cdn.cyfoethnaturiol.cymru/media/2110/how-to-comply-with-your-environmental-permit.pdf?mode=pad&rnd=131467604540000000 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

Installation name	Afan STC	
Description of the schedule 1 activity or directly associated activity	**Best available technique (BATC, BREF or TGN reference)**	**Document reference**
	H2 Energy efficiency (Energy efficiency for combustion and energy from waste power plants) H3 Noise assessment and control H4 Odour management H5 Site condition report Control and monitor emissions for your environmental permit	https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit https://www.gov.uk/government/publications/energy-efficiencyfor-combustion-and-energyfrom-waste-power-plants https://www.gov.uk/government/publications/environmentalpermitting-h3-part-2-noiseassessment-and-control https://www.gov.uk/government/publications/environmentalpermitting-h4-odourmanagement https://cdn.cyfoethnaturiol.cymru/media/1213/site-condition-report-template.pdf?mode=pad&rnd=130989730490000000 https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

Source: Mott MacDonald

A copy of the schematics describing the operation and process can be found in document reference 100123523_ProcessFlow_AFA September 2024.

6.5 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 Afan site, and the outcome of these conclusions can be found in document reference 100123523_BAT_AFA September 2024.

This document reflects the existing arrangement at site and any commitments DCWW has made during the 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 NRW, in plans to be submitted as part of Improvement Conditions within the permit, for their agreement and NRW's subsequent implementation.

An assessment in accordance with CIRIA 736 was undertaken in 2020 to provide the required containment solutions to meet the BAT requirements. The Mott MacDonald modelling team have modelled and produced a concept design for a potential solution. DCWW are currently looking to provide 110% containment of the largest, as this is the greater figure when compared to the 25%/110% rule. The containment options report is presented in B16399-123532-ZZ-XX-RP-WA-HY1008 - Afan WwTW Sludge Containment Assessment. The ADBA Risk Assessment is provided in B16399-123532-ZZ-XX-AS-ZA-CI1012 - Afan ADBA Assessment.

Part compliance to the IED permit on Afan is the installation of new impermeable areas, along with suitable rainwater drainage and protection bunds in order to contain any potential sludge spillage within the areas highlighted below.

High-level inspection and maintenance required:

Drainage	Visual inspection monthly and when operational collecting rainwater throughout the year
Impermeable concrete areas	Visual inspection for cracking monthly

Drainage	Visual inspection monthly and when operational collecting rainwater throughout the year
Bunds/kerbs	Visual inspection for movement or lines out of alignment.

All of the measures should be inspected in more depth in line with above annually with any findings rectified or after any spill from the process equipment on site.

It is important that cracking or defective bunds are rectified immediately to ensure protection aligning with the BAT18 of the IED permit.

Supplementary documents for the BAT assessment are provided:

- BAT 1: Environmental Management System is provided in 10012523_MSD_ISO 14001_AFA.
- BAT 1, 21 and 38: Accident Management Plan (AMP) is provided in 100123523_AMP_AFA September 2024. 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 document reference B16399-123532-ZZ-XX-RP-WA-HY1008 - Afan WwTW Sludge Containment Assessment and B16399-123532-ZZ-XX-AS-ZA-CI1012 - Afan ADBA Assessment October 2024.
- BAT 1, 11, 22 and 35: Residues Management Plan (RMP) is provided 100123523_MSD_ResidueMP_AFA January 2025.
- BAT 1, 8, 10, 12, 13, 14, 33, 34 and 52: Odour Management Plan (OMP) is provided in 100123523_ERA_OdourMP_AFA_September 2024.
- BAT 2 and 52: Description of the waste acceptance and pre-acceptance procedures provided in 100123523_WasteAcceptance_AFA September 2024.
- BAT 3, 6, 7 and 20: Sampling commitment and proposal for characterisation is provided in 100123523_SamplingPlan_AFA September 2024.
- BAT 14 Leak Detection and Repair Plan (LDAR) is provided in 100123523_MSD_LDAR_AFA September 2024.
- BAT 14: Bio-aerosols Risk Assessment (BRA) is provided in 100123523_BioRA_AFA September 2024 as a technical note to screen out the need for one.
- BAT 17: Environmental Risk Assessment (ERA) is provided in 100123523_ERA_AFA January 2025.
- BAT 19 and 38: ABDA Tool and proposed secondary containment options report is provided in B16399-123532-ZZ-XX-RP-WA-HY1008 - Afan WwTW Sludge Containment Assessment and the ADBA risk assessment is provided in B16399-123532-ZZ-XX-AS-ZA-CI1012 - Afan ADBA Assessment.
- BAT 19: Drainage is provided in 100123523_DrainagePlan_AFA September 2024
- BAT 23: Energy Efficiency is provided in 100123523_MSD_AFA January 2025
- BAT 34: Reducing channelled emissions, addressed in the Odour Management Plan (OMP), provided in 100123523_ERA_OdourMP_AFA_September 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 100123523_ERA_OdourMP_AFA_September 2024.

6.6 Question 3b: General requirements

6.6.1 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, in accordance with the H1 ERA Guidance and is provided with the application (Document reference: 100123523_ERA_AFA January 2025). The response to this question relates to Table 4 in the Part C3 form.

6.6.2 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 DCWW follow with regards to the control of mud and debris and potentially polluting leaks and spillages are addressed in the EMS.

As combustion activities are not being changed on Site as a result of the proposal, it is not anticipated that Air Quality Dispersion Modelling is required to address the emissions of the CHP units. This is because the CHP units are already permitted under the existing permit number EPR/ZP3032KQ.

Additional emissions from the Site include:

- Water vapor from the hot water storage tanks, team condensate and gases are either recaptured back into the THP process or captured in the foul gas drum and discharged into the digester.
- Water vapour from the blowdown vessel. There is a vent to atmosphere on the hot water storage tanks to ensure the tank is never pressurised;
- Pressure relief valves and devices are located on the steam system, boilers and on the gas holder. These are vented to atmosphere;
- There are a number of potential emissions from the biogas condensate pots; however, low level alarms have been fitted to notify the operator if the seal has been broken.
- The additional emissions identified are considered to represent a negligible amount to the overall emissions of the Site and are not considered to contain pollutants considered detrimental to the environment.

Pressure relief valves (PRVs) are inspected daily.

The gas holder is equipped with a level transmitter which is used to determine the volume of biogas in the gas holder, where the level of the gas holder is a low or a high level, an alarm is raised on the SCADA system.

Pressure relief valves will be used in emergencies only, and are not part of normal operation, all PRVs and breather vents are fitted in appropriate locations. PRVs on the Cambi plant (THP and anaerobic digestion process) have abatement in a form of a Caisson where releases are captured and directed through pipework to ground level.

6.6.3 Odour

Afan WwTW is situated an industrial area and is bounded to the north and east by part of Tata Steel, separated by a railway line. There are no sensitive receptors within 250m of the Site. Despite Tata Steel and Tarmac being adjacent to the STC, it is understood that the areas within closest vicinity of the Site are expected to have low levels of staff activity, with the Tata offices being located over 1km from the site boundary.

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.

Odour control assets implemented at the STC are as follows:

- The site also has two odour control units (OCUs) to mitigate the risk of odour. OCU 1 extracts from the cake import hopper, the indigenous cake silo, the THP feed silo and the centrifuges. using a carbon filter system.
- OCU 2 (currently not in use) extracts odorous air from the belt press and cake bays and comprises a sulphuric acid scrubber. Media life and condition is reviewed on a regular basis although it is anticipated that media should last a minimum of two years.
- Leak detection (methane gas analyser) is 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 DCWW due to the process safety risk of posed by biogas.

DCWW is progressing detailed survey and assessment of the existing OCUs to understand any additional measures that may be required to meet BAT 34 and 53.

The level of odour risk from the Site is considered to be low, as shown in Appendix B of the ERA document reference 100123_ERA_AFA January 2025.

Olfasense will undertake a site visit to conduct a quantitative odour impact assessment (OIA) and will produce an updated report for the STC. The existing OIA for the Site was undertaken in September 2022. The report is provided in document reference 100123523_OdourIA_AFA September 2024.

The odour management plan (OMP), based on the outcome of the assessment and in accordance with the H4 guidance is provided in 100123523_ERA_OdourMP_AFA_September 2024.

In addition, DCWW have requested Olfasense to support site operation teams to undertake regular checks on the OCU's for the first six months after permit issue, so they understand what checks and NRW reporting is required in the future. In the interim, DCWW will continue to follow the existing odour management plan and odour impact assessment previously submitted with the application.

6.6.4 Noise

Initial screening has been carried out for the Site. The Site has not received any noise complaints and 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.

Since the level of noise risk from the Site is considered to be low, as shown in Appendix B of the ERA (100123523_ERA_AFA January 2025), the potential noise impacts of the Afan STC have been high level assessed by way of a comparison of:

- Predictions of noise impact based on reference measurements of the same types of equipment installed at similar facilities and a simple propagation model; and
- Representative baseline noise levels obtained from published strategic noise maps

The high-level noise assessment is provided in document reference 100123523_Noise Impact Assessment Technical Note_AFA September 2024. This indicates that the calculated rating levels for the operation of Afan STC are expected to be significantly below background sound levels during the day and night-time, therefore having low or no impact.

6.6.5 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 100123523_ERA_AFA January 2025.

6.6.6 Bio-aerosols

A bio-aerosols risk screening assessment has been undertaken for the Site as part of this permit variation and a technical note produced, screening out the need to undertake one, is presented in 100123523_BioRA_AFA September 2024. The assessment identified no locations where people are likely to spend more than six hours at any one time within 250m of the potential bioaerosol sources. Therefore, a site specific bioaerosol risk assessment, or bioaerosol monitoring, is not considered to be required.

Nonetheless, best practice methods will be followed during operation of the facility, to prevent the release of bioaerosols. These include methods and principles outlined in the NRW guidance on treatment of non-hazardous sludge biological, chemical and physical which are described in the ERA (document reference 100123523_ERA_AFA January 2025).

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

All drainage water including surface or foul water is captured by the drainage network which returns all water to the head of the works for treatment.

There are no direct potentially contaminated discharges to groundwaters. Condensate from the flare, CHP and the biogas is captured in condensate pots and is discharged to drainage and directed to the inlet works.

There is appropriate containment for the control of liquid wastes put in place to minimise any potential releases, as identified in the EMS.

Accidental releases of materials to the environment are controlled through adequate containment measures and working procedures.

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 EMP is not considered to be required.

6.6.8 Control of fugitive emissions to land

There are not considered to be any fugitive or point source emissions to land from the activities on Site.

Details of waste generated at the site is demonstrated in document reference 100123523_AMP_AFA September 2024.

As part of the quarterly health and safety checklist the site is screened for general litter, mud, and debris both within and outside site boundaries.

6.6.9 Site security

Activities are managed and operated in accordance with the EMS. Access to the Site is restricted by a 3m palisade fence and electric front gate. The Site also benefits from a CCTV system, and intruder detection alarms. 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.

Other risks relating to human health and the environment is presented in Appendix B of the ERA, document reference 100132523_ERA_AFA September 2024.

6.6.10 Complaints procedure

Direct from DCWW policy:

“According to the Consumer Council for Water (CCW), a complaint is any inbound contact from a customer not eligible to switch retail provider or customer’s representative that expresses or implies dissatisfaction with the charges, service or functions provided by the company. Dissatisfaction should be identified in the body or title of the written correspondence/ contact or the customer’s sentiment at the close of a telephone/web chat/visit contact. Subsequent contacts about the same issue from the same customer should be reported as a complaint unless it falls under any of the exemptions.

We must accurately report all complaints for both Household and Non-Household. This information is used for:

- Household complaints reporting for CMEX in England and Wales
- Household and non-household complaints for CCW reporting
- Non - household complaints for Ofwat benchmarking.

We make a commitment to our customers that if they’re unhappy with the outcome of their first complaint and write to us again, it will be reviewed by another person / case handler before making recommendations to a Director.

Written Complaint Stages

We make a commitment to our customers that if they’re unhappy with the outcome of their first complaint and write to us again, it will be reviewed by another person / case handler before making recommendations to a Director.

<u>Stage 1 complaint received from a customer or their representative</u>

The classification of a Stage 1 Complaint can be one of the following:

- A complaint with no history of previous complaints on the same subject
- A second complaint about the same issue, but where we haven’t had chance to answer within 10 working days from the original complaint.
- A follow-on written contact - If the new information relates to the original complaint but is substantial enough to change the outcome, then the company may report it as a stage 1, even if it the company reviews the complaint and decides no further action is necessary
- The new issue (s) are not connected to the original complaint, and, could or would change the outcome of the original complaint (whether it ultimately does or not), or, the original complaint has been resolved to the customer’s satisfaction.

Examples of these may include:

- Attitude of company staff.

- The date or timescale to resolve the issue (perhaps due to operational works); and
- Recompense for the original service failure if it isn't mentioned in the customer's first contact or is not part of the resolution of the initial complaint.

NB: In cases where there is nothing further that can be done, a Director may consider the Stage 1 response to be the final stage. In these instances, we will advise customers that we've completed the company complaints procedure (including Directors review) and signpost them to CCW.

Follow on complaints about the same matter or outcome would fall under exclusions as 'continued correspondence' and report as a stage 3. But only after Stage 1 when we've explained there is nothing else, we can do and fully reviewed the complaint.

Stage 2 (escalated complaint)

The classification of a Stage 2 Complaint is one of the following:

- A second written complaint from a customer relating to the same issue, following our response to the initial Stage 1 complaint
- New information (provided by the customer) which is something we should have been aware of, such as our own literature, action, works or contacts to the customer

Note: If the second complaint is received more than 12 months after the initial response, then this will be treated as a new Stage 1.

Stage 2 Repeat

After the Stage 2, if we receive further correspondence about the same issue and we consider an alternative course of action, then these complaints should be categorised as a Stage 2. repeat complaint.

Stage 3 (exhausted complaint)

The classification of a Stage 3 is as follows:

A further written complaint from a customer relating to the same issue; where the customer has already been advised that we have completed the company complaints procedure and they can, if they wish, contact CCW.

If a customer continues to correspond after this stage, unless there are new issues or new information, these will be categorised as a Stage 3.

Telephone, SMS, Web Chat, Visit and Social Media Complaints

This section is new and gives information on how we now need to report when dealing with customer complaints in real time.

First customer contact through telephone, SMS, web chat, social media or visit.

All contacts through the above channels should be reported as a complaint based on the customer sentiment at the conclusion of the first contact or visit. If, at the end of the contact the customer is or appears satisfied or considers the matter resolved without complaint, we do not need to mark this contact as a complaint.

Examples of when we need to classify inbound contacts as complaints include:

- Customer disagreement or challenge even when we've explained our policy or procedure.
- Early termination of the contact by a customer whereby the end sentiment is negative (but not from loss of connection).

- Customer asks for their query to be escalated.
- Customer's tone or mood is negative.

If in doubt, we can ask the customer if they are satisfied with our explanation and proposed next steps at the close of the contact but this must be done with no pressure on customers to agree. If we choose not to ask and are in doubt of the customer's sentiment, this will need to be classified as a complaint. It's really important we only consider the customer sentiment at the end of the first contact.

If a customer expresses satisfaction, for example, an agreed action, gratitude or says that we don't need to do anything further then the contact should not be reported as a complaint. Similarly, if we are unable to answer the customer's points then where possible it should offer the customer a handover to another member of staff. In this event the customer sentiment should be based on the conclusion of the contact. If the customer requests a call back, or if we initiates the call back, it should be treated as the continuation of the initial contact. The customer sentiment should be considered at the conclusion of the first call back only and not subsequent contacts.

Call back for web chat and social media

For webchat and social media contacts, in the event we ask customers provide their telephone number for them to contact them over any issue, then our call back should be treated as an inbound contact. If the customer sentiment is negative at the end of the contact then it should be reported as a complaint. Complaints should be reported by the initial method of customer contact.

Complaints via social media

Ofwat's final Methodology for the 2019 Price Review states companies should offer at least five communication channels, including at least three online channels for receiving customer contacts and complaints. In line with this guidance, we may offer a route for customers to complain via social media. We now need to report complaints through all social media channels we offer as contacts to customers.

In line with the inbound principle, we should only report complaints through social media where the customer contacts us directly, either through a visitor post on the company page or site or direct/personal message (and the company can identify the customer).

Customer comments about another customer posting should not be reported as a complaint.

When we are not available to respond immediately but feel a response is warranted, we need to contact the customer and conclude the contact within 24 hours. Any contact that continues beyond 24 hours should be reported as a complaint. To gauge a level of proportion, we need to report to CCW where possible the numbers of contacts via social media which went beyond the 24-hour timescale.

Again, we need to consider the customer sentiment at the end of the contact and where the customer is dissatisfied or there is implied dissatisfaction then the contact should be reported as a complaint.

Engagement with customers via social media

Customers who comment of our posts via social media should be responded to at our discretion. Where we feel a response isn't warranted then we do not need to report this as a complaint. Where we choose to respond directly to a customer from a post, such as if the customer is asking for further information or has been affected by the subject of the post then

we should report the contact as a complaint if at the close of the contact the customer is dissatisfied or implies dissatisfaction unless an exemption applies.

Vexatious Complaints

A small number of customers make vexatious complaints such as:

- Persistent/obsessive/repetitive complaints without sufficient or reasonable grounds/evidence;
- Repeated complaints about the same matter (and/or with minimal changes to the subject matter) together with a refusal to accept decisions;
- Refusal to co-operate with our complaints procedure;
- Any other complaint or behaviour that has been identified as having the potential to adversely affect the health or wellbeing of our colleagues.

Our Vexatious Customer Register enables us to identify and record customers who have made vexatious complaints. The complaints team manager is responsible for holding, updating and reviewing the Register. For further information please read the Vexatious Customer Policy or contact our Head of Customer Service and/or the Legal Team.

General Correspondence

General Correspondence is any other correspondence that isn't a complaint. Everyone who handles correspondence is responsible for ensuring that it is classified correctly.

The process for logging on/responding/logging off General Correspondence is the same as for written complaints. However, the response for General Correspondence does not need to include information on our complaints procedure.

Data Protection Act

To ensure DCWW's compliance with the Data Protection Act 2018 we must only disclose a customer's personal data to a third party (including someone calling on behalf of the customer such as their partner or parent and/or an AM/MP), if we have satisfied ourselves that the third party has the customer's consent to receive the information"

6.7 Question 3c: Types and amounts of raw materials

Details of raw materials stored on the site is demonstrated in document reference 100123523_ResidueMP_AFA January 2025.

The COSHH assessments for the raw materials listed can be found in 100123523_MSD_COSHH_AFA September 2024.

6.8 Question 4: Monitoring

Odour modelling has been undertaken at the Site and the results are provided in document references:

- 100123523_OdourIA_AFA September 2024
- 100123523_OdourMeasurement_AFA September 2024
- 100123523_OdourModel_Baseline_AFA September 2024
- 100123523_OdourModel_Mitigation_AFA September 2024.

Where the modelling identifies risk to any of the receptors an OMP has been developed in accordance with H4 Odour Management guidance[3]. The OMP is provided in document reference 100123523_ERA_OdourMP_AFA_September 2024.

As per the Works Operating Manual (WOMs) and the Hazard Analysis and Critical Control Point (HACCP) plans maintenance of specialised equipment is carried out in accordance with the specific manufacturers' handbooks, which are held in the operations office.

Monitoring of the digester level is undertaken using three level instruments on each digester, two hydrostatic pressure instruments, and one radar instrument.

The gas holder is equipped with a gas leakage detector for monitoring the methane concentration in the cavity between the inner and outer membranes. If the methane concentration exceeds a pre-set value, an alarm shall be raised and the gas holder shall be isolated.

There are two instruments on the common biogas line to the CHPs/boilers which measure gas quality. One instrument continuously monitors the hydrogen sulphide concentration in the biogas, and the other instrument continuously monitors the methane concentration in the biogas.

Boiler water quality will be monitored regularly, including:

- Frequent monitoring of feed water quality;
- TDS blowdown – Continuous monitoring of TDS with automatic operation of top blow down system as required. A high-high TDS concentration shall raise an alarm and shut down the boiler;
- Automatic (timer controlled) bottom blowdown system;
- Manual blowdown system

Continuous monitoring of the pressure, retention time and ultraviolet dose rate will be monitored continuously. Sampling is undertaken either at the start up, or when the process significantly changes and is repeated every 10 years.

Sampling of the digested sludge cake is undertaken in accordance with the BAS Sampling Programme, monthly for six months after validation or significant deterioration in quality or change in treatment process and then every three months.

This section provides a summary of the proposed monitoring at the Site for the additional infrastructure and land area associated with the permit variation. Reference to the existing permitted CHP has not been included.

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.

Periodic monitoring will be undertaken on an annual basis as part of the routine maintenance programme. No 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.

Air emissions survey and annual reporting are provided in 100123523 Afan Emissions monitoring August 2023 and 100123523 Afan air emissions reporting for 2023 (Jan 2024).

[3] H4 Odour Management, How to comply with your environmental permit, Environment Agency, 2011. Available online How to comply (publishing.service.gov.uk)

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
CHP and boilers	As per existing permit	As per existing permit	As per existing permit	As per existing permit
Flare	Operational hours	Recorded duration and frequency.	Continuous	Operational record including date, time and duration of use shall be recorded
Channelled missions 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, pipes, stack, etc
	H_2S			
	Odour concentration		Once every 6 months, or more frequent if stated in the permit	BS EN 13725
Pressure relief valves	Biogas release and operational events	Recorded duration and frequency.	Daily inspection	Operational record including date, time duration of pressure relief events and calculated annual mass release

6.8.1 Assessment of sampling locations

DCWW will employ sub-contractors accredited to MCERTS to monitor the emissions points in accordance with the permit requirements. An assessment of sampling locations is therefore not appropriate as this will be the responsibility of the sub-contractors. DCWW are committed to undertaking any monitoring, sampling and analysis of emissions to air or water in accordance with MCERTS, or equivalent agreed standards, by relevant and appropriately accredited contractors, in accordance with permit requirements. Proposed sampling locations for emissions to water is provided in 100123523_SamplingPlan_AFA September 2024.

6.8.2 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.

6.8.3 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 sewers, as part of the permit operation. The site layout plan, drawing reference 100123523_SiteLayoutPlan_AFA September 2024, identifies the point at which liquors leave the site to enter the WWTW at the inlet. A sampling location has also been identified on the site layout plan, although sampling will be undertaken as part of wider implementation under BAT and IED.

DCWW confirms that they will undertake a chemical analysis of their wastewater, from the STC entering the adjacent 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 requirements for meeting BAT and IED compliance. It is therefore, considered that this will be added as Improvement Conditions to the permit.

Condensate is routed to the works return of the adjacent Peacehaven WTW and will undergo treatment through the works before being discharged under an existing environmental permit for discharge to water. This condensate is clean, uncontaminated water and occurs in small volumes. As such, no monitoring or reporting is required. There are no direct releases to public sewer or other transfers off-site of emissions arising from the STC.

All condensate discharges to the liquor return well and then back to the head of the works of the adjacent Afan WwTW. There are direct releases to sewer from the STC from the liquor return well, but no other transfers off site of emissions arising from the STC. An sampling plan for the STC is presented in 100123523_SamplingPlan_AFA September 2024.

6.8.4 Emissions to land

There are no direct releases to land of emissions arising from the STC. All condensate is discharged to the liquor returns well. As required by the DCWW 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 DCWW 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 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

DCWW 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. Diesel is used for the heating buildings or running the boilers, where required.

6.11 Question 6a: Basic measures of 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 DCWW EMS is to reduce energy consumption from the grid. Procedure EMP003 specifically contains objectives for the Reduction of Energy Consumption Programme; this includes the commitment to produce monthly usage energy reports that are to be sent to Senior and Operational management and obtaining detailed electricity usage information via metering of specific areas of plant.

DCWW 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.

DCWW is dealing with the measurement and reporting of operational carbon emissions in existing installations through:

- Monitoring of energy use from electricity meters
- Quarterly estimation and reporting of operational carbon emissions for internal reporting purposes
- Annual estimation and reporting of operational carbon emissions for regulatory reporting (Ofwat and CRC)
- Energy efficiency measures implemented at the Site include (but not limited to) the following:
- The combustion temperature is maintained relatively constant for reduced Nox emissions and increased efficiency.
- The engines are equipped with turbochargers, further increasing energy efficiency.
- Ongoing monitoring of plant operating parameters is carried out to ensure process is operating optimally and to enable constant optimisation to increase the plant's efficiency.
- Good housekeeping measures are employed, and regular preventative maintenance will ensure the operations, and therefore energy efficiency, is optimised.
- Low cost measures in place to avoid inefficiencies of excessive heating or cooling, include:
- Insulation of main hot water pipes; and
- Insulation of heating equipment such as hot water heat exchanger, boiler feed water tank and boiler feed water pumps and pipework.

Utilising low energy equipment for lighting such as:

- High frequency fluorescent lighting, high pressure sodium or LED
- Allowing for local or modular switching, where appropriate
- Consideration of energy recovery and the deployment of renewable energy systems, including
- CHP

There are limited opportunities for energy efficiency requirements as the buildings are not heated. Energy efficient lighting will be used throughout such buildings.

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.

The development of an energy efficiency plan will be considered once the Site is permitted; this will determine areas of improvement and will be developed under DCWW Environmental Policy and EMS.

In addition, DCWW 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.

6.12 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.

6.13 Question 6c: Climate change levy agreement

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

6.14 Question 6c: Specific measures for improving energy efficiency

When equipment is replaced, energy efficient plant will be utilised in replacement. No other specific measures.

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

Details of raw materials is demonstrated in document reference 100123523_MSD_ResidueMP_AFA January 2025.

6.16 Question 6e: Reducing production of waste

Details of waste generation and reduction measures are demonstrated in document reference 100123523_MSD_ResidueMP_AFA January 2025.

6.17 Question 7 and Question 8: Combustion plant

The two existing CHP units and boilers on-site were installed in 2010 fuelled by biogas. The CHPs (thermal rated input of 3.745MWth each) and boilers (thermal rated input of 3.9MWth). The Site is already permitted under the scope of the Medium Combustion Plant Directive (MCPD).

7 Part F1 – Charges and declarations

7.1 Question 1: Working out charges

Table 1 of the F1 form has been completed. An up-to-date Charging Band profile, and completed spreadsheet for the newly introduced charging banding tool have been provided in 100123523_MSD_ChargeBanding_AFA_ September 2024.

7.2 Question 2: Payment

Payment will be made by BACS.

7.3 Question 4: Confidentiality and National security

DCWW do not wish to claim confidentiality with this application.

7.4 Question 5: Application checklist

Table 7.1 provides a list of documents included in the application. Table 7.1 below has been used to only provide the references to standalone documents. References to all other questions are found in the MSD which makes reference to the question. Specific sections to the MSD are identified in the relevant forms.

Table 7.1: Standalone document references

Question reference	Document title	Document reference
Part A – Q5a	Details of Directors	100123523_MSD_Directors_AFA September 2024
Part C2 – Q2b, 3d, Part C3 – Q1a, 1b, 2, 3a, 3b, 3c, 4, 6, Part F1 – Q6	Main Supporting Document	100123523_MSD_AFA_January 2025
Part C2 – Q3a	List of Relevant Offences	100123523_MSD_RelevantOffences_AFA September 2024
Part C2 – Q3b	Technical Competency	100123523_MSD_CMS Cert_AFA September 2024
Part C2 – Q5a	Site Location Pan	100123523_SiteLayoutPlan_AFA September 2024
	Site Layout Plan	100123523_SiteLayoutPlan_AFA September 2024
	Drainage Plan	100123523_DrainagePlan_AFA September 2024
Part C2 – Q5b, Q5c	Site Condition Report	100123523_SCR_AFA September 2024
	Ground Investigation Logs	100123523_SCR_AppB_GI_Logs_AFA
	Ground Investigation Results	100123523_SCR_AppB_GI_Results_AFA
	Envirocheck Report	100123523_SCR_App C_Envirocheck_AFA
	Supporting information: 2009 SCR	100123523_SCR_supporting_previous SCR
Part C2 – Q6	Environmental Risk Assessment	100123523_ERA_AFA September 2024
	Environmental Constraints Maps	100123523_ContraintMaps_AFA
	2009 Air Dispersion Model report–	100123523_ERA_ADM2009_AFA
	Air emissions report	100123523 Afan air emissions reporting for 2023 (Jan 2024)
	Emissions monitoring report	100123523 Afan Emissions monitoring August 2023
Part C2 – 3d	Environmental management System certificate	100123523_MSD_ISO14001_AFA
	Accident Management Plan	100123523_AMP_AFA September 2024
Part C3 – Q1b	Waste Acceptance procedure	100123523_WasteAcceptance_AFA September 2024

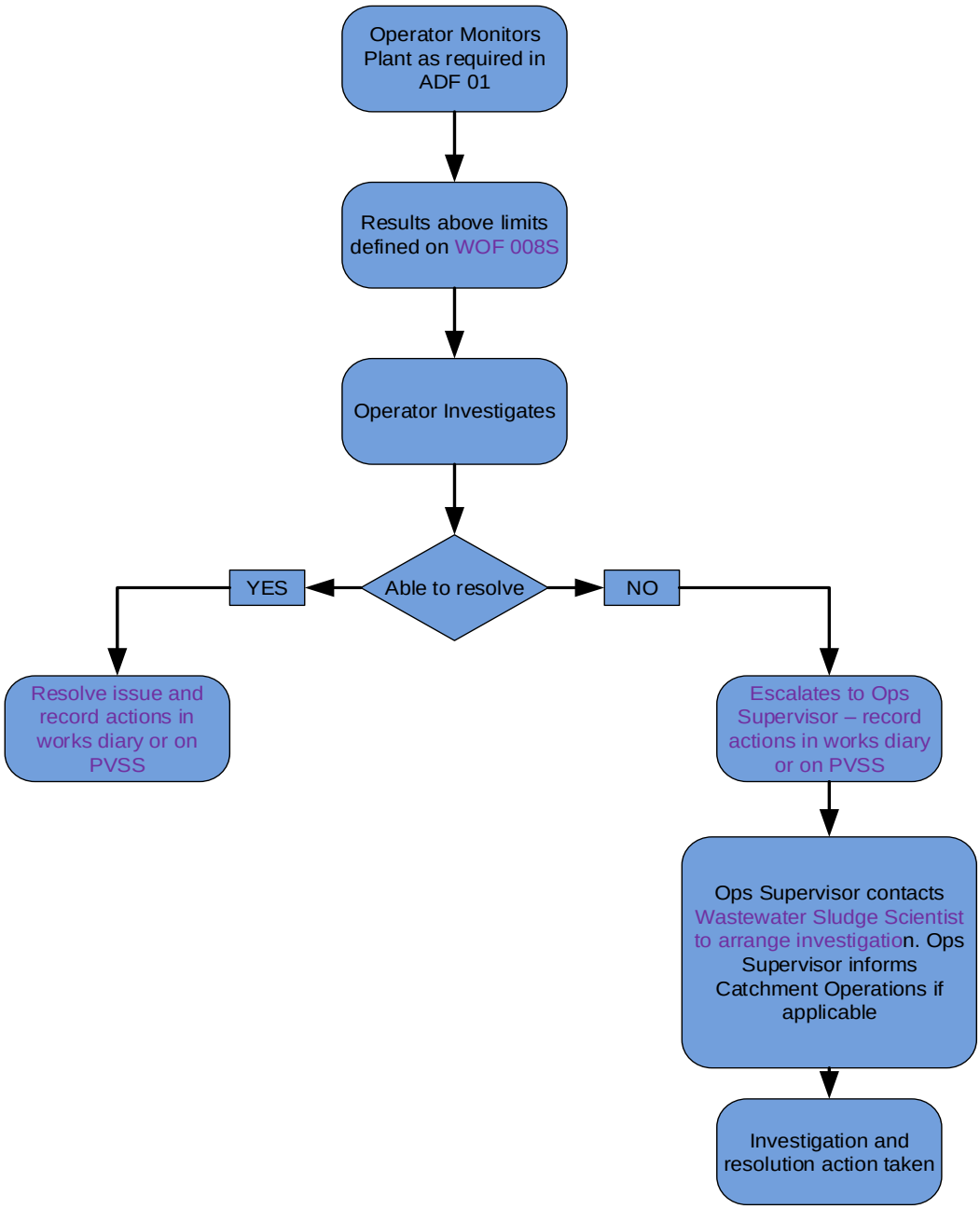
Question reference	Document title	Document reference
Part C3 – Q3	BAT assessment	100123523_BAT_AFA September 2024
	CIRIA 736 Assessment	B16399-123532-ZZ-XX-AS-ZA-CI1012 - Afan ADBA Assessment October 2024. B16399-123532-ZZ-XX-RP-WA-HY1008 - Afan WwTW Sludge Containment Assessment September 2024 B16399-123532-XX-AB-MA-ZA-OA0038 - Flood Gates Control Philosophy September 2024
	Residue Management Plan	100123523_ResidueMP_AFA_January 2025
	Leak Detection and Repair Plan	100123523_LDAR_AFA September 2024
Part C3 – Q3a	Process Flow Diagram	100123523_MSD_ProcessFlow_AFA September 2024 100123523_AFA PIDS zone 9 liquor returns well (goes with 100123523_MSD_ProcessFlow_AFA September 2024)
Part C3 – Q3b	Odour Management Plan	100123523_OdourMP_AFA September 2024
	Odour modelling files	100123523_OdourModel_Baseline_AFA September 2024 100123523_OdourModel_Mitigation_AFA September 2024
	Odour Impact Assessment	100123523_OdourIA_AFA September 2024
	Odour Measurement Plan and Method Statement	100123523_OdourMeasurement_AFA September 2024
	Noise Impact Assessment	100123523_Noise Impact Assessment Technical Note_AFA September 2024
	Bioaerosol Risk Assessment	100123523_BioRA_AFA September 2024
Part C3 – Q3c	COSHH information	100123523_MSD_COSHH_AFA
Part C3 -Q4	Sampling plan	100123523_SamplingPlan_AFA September 2024
Part F1	Charge banding	100123523_MSD_Charge Banding_AFA September 2024
	Authorisation	100123523_MSD_AuthorisationLetter_AFA January 2025 (NRW letter of authorisation for permitting matters)

A. Waste Codes

The annual throughout is 438,000 (wet) tonnes/annum (21,900 tds @ 5%) across two digesters.

Waste Code	Description
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTEWATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL 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)
19 06	**description digestate from anaerobic treatment of animal and vegetable waste**
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only).
19 08	**wastes from wastewater treatment plants not otherwise specified**
19 08 05	sludges from treatment of urban wastewater
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 12	wastes from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only)

B. Abnormal Results Escalation Procedure – AD Plant



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