Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

T&L Sugars Limited

Thames Cane Sugar Refinery
Factory Road
Silvertown
London
E16 2EW

Variation application number

EPR/MP3530HZ/V005

Permit number

EPR/MP3530HZ

Thames Cane Sugar Refinery
Permit number EPR/MP3530HZ

Introductory note

This introductory note does not form a part of the notice.

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Changes introduced by variation made by the operator (V004)

- The relocation of the small waste storage area from the north side of the raw sugar shed to the west side of the raw sugar shed. This is a relocation of about 120m west and moves the waste storage area away from the main processing areas. This requires a change to the permit boundary to incorporate the road, to the northwest of the raw sugar shed, the road will be used to move waste via vehicle.
- Additional emission points:
    - A76 & A77 Dust collection vents.
    - A78 & A79 Raw sugar jetty discharge buckets.
    - Internal emission point A80 - bag filter Exhaust for the section shed dust collector.
    - A81 & A82 Cartridge filter for icing sugar dust abatement.
- The partial surrender of land from the permit boundary. The parcel of land is to the west of the site, this land was included in the installation boundary in 2016 and was used to store raw cane sugar as a stockpile.
- Removal of 4 x 19MWth Biomass Boilers from the permit which were never commissioned and the associated emission points A58 – A64.
- Removal of the 500 hour restriction on WHB Auxiliary forced draft (FD) firing
- Removal of emission points S1, S4, and S6 have been removed as they are no longer used.

Changes introduced by variation notice / statutory review (V005)

This consolidated permit has been issued following a full review against the best available techniques (BAT) conclusions for the Food, Drink and Milk Industries published on 4th December 2019 in the official journal of the European Union.

We have also implemented the requirements of the relevant BAT Conclusions from the Large Combustion Plant BRef.

The schedules specify the changes made to the permit.

The main features of the permit are as follows.

The Thames Cane Sugar Refinery is located on Factory Road, Silvertown, approximately 1 km east of City of London, located at TQ 42187 80046. The installation carries out cane sugar processing and manufactures a range of products, which include packages consumer sugar, liquid and bulk granulated industrial sugars.

The installation is permitted for the following Schedule 1 activities:

Section 6.8A(1)(d)(ii) Treatment and processing vegetable raw materials for the production of food or feed at a plant with a finished production capacity exceeding 300 tonnes per day.

Section 1.1A(1)(a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.

Section 5.4A(1)(a)(ii) Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by physico-chemical treatment.

Section 3.1B(c) Slaking lime for the purpose of making calcium hydroxide or calcium magnesium hydroxide.

The sugar production process comprises:

- Receipt of part processed sugar cane delivered by ship to the raw sugar jetty on the River Thames.
- Affination. The raw sugar is washed using heavy syrup to remove molasses from sugar crystals. Molasses is recovered from this process as a co-product.
- Melting. The raw sugar is then melted via heating to produce a raw sugar liquid.
- Carbonatation and Filtration. The sugar liquid undergoes a two-stage carbonation process to remove impurities. The milk of lime is added from the lime slaking process, carbon dioxide is added from the limekilns. Impurities are removed by the calcium carbonate, which is formed by the reaction between the milk of lime and the carbon dioxide. The calcium carbonate is recovered from the process and sold as a co-product as calci cake. Liquid sugar products are also recovered at this stage.
- Evaporation. The liquid sugar is concentrated via a series of evaporators.
- Sugar crystallisation. Crystallisation is carried out by heating the syrup, sugar crystals and isopropanol are used for seeding to promote the formation of sucrose crystals.
- Centrifuging and drying. The crystal/ syrup mixture is discharged for centrifuging. Sugar crystals are removed from the liquid phase by centrifuging. The hot, damp sugar is dried, the sugar is divided into further processing as either refined white sugar or industrial and golden syrup.
- Refined white sugar - is either sent for packing and dispatches as a final product or is sent for further processing to be milled to produce finer sugar products which are then packaged as final products.
- Industrial and golden sugars – is either packages as bulk golden sugars as a final product or undergoes an additional processing step via a mixer and is then packages as soft brown sugar.

The site has two Large Combustion Plants (LCPs) these are LCP392 and LCP393 to produce heat, steam and electrical power utilised in the sugar processing activity. The primary unit is a combined heat and power plant (LCP393 emission stack A2) which is the combustion plant for electrical power generation within a gas fired gas turbine (GT) and waste heat boiler (WHB); this operates mainly as a combined cycle gas turbine (CCGT) with steam turbines. The $6MW_{elec}$ GT has a net thermal input of 21MWth and can operate in open cycle gas turbine (OCGT) mode with emission stack A3. The gas turbine has a Dry Low Emission (DLE) core to control NOx emissions to air which only operates during CCGT mode (i.e. added combustion when the GT is running [up to 43MWth]); or auxiliary firing up to 57 MWth, also called force draft (FD) firing, when the GT is not operating – thus acting as an emergency boiler. FD firing had a previous limit of 500 hours per year which has been removed – FD firing should be limited to use in emergency conditions and completed under circumstances which will be outlined in the operating technique which will be agreed in IC33. The GT can also operate in Turbine Exhaust Gas (TEG) only mode, this is defined as when the GT is fired (using natural gas or gas oil) but the WHRB is not fired on natural gas, however the turbine gas is exhausted via the WHRB which acts as a heat exchanger.

The second LCP392 is a pair of natural gas fired Aalborg package boilers each with a thermal input of 60MWth (total aggregated thermal input of 120MWth) releasing via emission point A1. These can also feed steam to the steam turbine.

The plant has a back-up supply of fuel gas oil for both LCPs, which can be utilised during periods of gas supply interruption. The fuel gas oil is selected with low sulphur content to minimise sulphur dioxide emissions.

The site has onsite wastewater treatment which include pH adjustment and cooling for process effluent which may include acidic, alkaline or hot wastewater. Treated effluent is discharged to sewer for further treatment by the sewage undertaker.

The installation emits sulphur dioxide, nitrogen oxides, carbon monoxide, and particulates to air. Particulate emissions from the mixing of lime are abated by bag filters.

The Epping Forest Special Area of Conservation (SAC) is within 10 km of the installation. The Gilbert's Pit (Charlton) Sites of Special Scientific Interest (SSSI), a Local Nature Reserve and 12 Local Wildlife Sites are within 2km of the installation site boundary.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/MP3530HZ/V005	Received 30/06/2005	Application for an environmental permit.
Permit determined	29/03/2006	
Variation application EPR/BP7711IF/V002	Received 21/11/2006	
Variation determined	21/01/2008	
Transfer application EPR/MP3530HZ/T001	Duly made 13/08/2010	Full transfer of permit EPR/BP7771IF.
Transfer determined	24/08/2010	
Environment Agency initiated variation EPR/MP3530HZ/V002	31/03/2015	Response received to Regulation 60(1) Notice issued 31/10/2014
Variation determined	30/12/2015	Permit effective from 01/01/2006.
Variation application EPR/MP3530HZ/V003	Duly made 25/04/2016	Application to extend installation site boundary, introduce carbonation process, install new final product silo (silo D), installation of an agglomerator and co-crystalline pilot plant, and an emergency (black start) diesel generator.
Variation determined	20/07/2016	Varied and consolidated permit issued
Variation and Partial Surrender Application EPR/MP3530HZ/V004	Duly made 02/02/2023	This variation and partial surrender has been incorporated into EPR/MP3530HZ/V005 and issued as part that variation.
Application EPR/MP3530HZ/V005 (variation and consolidation)	Regulation 61 response 04/11/2022	Environment Agency initiated variation and consolidation following the Food, Drink & Milk Industries sector permit review.
Additional information received	31/07/2024	Email providing information relating to the combustion plants and operating conditions.
Additional information received	05/12/2024 & 10/12/2024	Information on TEG firing via email and teams meeting.
Variation determined and consolidation issued EPR/MP3530HZ	19/12/2024	Varied and consolidated permit issued in modern format

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number

EPR/MP3530HZ

Issued to

T&L Sugars Limited ("the operator")

whose registered office is

Thames Refinery
Factory Road
London
E16 2EW

company registration number 07318607

to operate a regulated facility at

Thames Cane Sugar Refinery
Thames Refinery
Factory Road
Silvertown
London
E16 2EW

to the extent set out in the schedules.

The notice shall take effect from 19/12/2024.

Name	Date
Stacey Tapsell	19/12/2024

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/MP3530HZ

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

T&L Sugars Limited ("the operator"),

whose registered office is

Thames Refinery
Factory Road
London
E16 2EW

company registration number 07318607

to operate an installation at

Thames Cane Sugar Refinery
Factory Road
Silvertown
London
E16 2EW

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Stacey Tapsell	19/12/2024

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;

(c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(d) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP392 and LCP393. The activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" dated May 2021 or any later version unless otherwise agreed in writing by the Environment Agency.

2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan , and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP392 and LCP393. Standby fuel gas oil may be used for periods of up to 10 days during times of interruption to the gas supply.

2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP 392 and LCP 393. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.

2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP393. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.

2.3.8 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.9 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 The emission values from emission point(s) listed in schedule 3 table S3.1, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Table S3.1 emission limit values.

3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

(a) point source emissions specified in tables S3.1, S3.2 and S3.3.

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:

(a) for the continuous measurement systems fitted to the LCP release points defined in table(s) S3.1 the validated hourly, monthly, yearly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;

(b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;

(c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;

(d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;

(e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period. Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and

(f) any day, in which more than three hourly average values are invalid shall be invalidated.

3.7 Pests

3.7.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.7.2 The operator shall:

(a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution from pests;

(b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the annual production /treatment data set out in schedule 4 table S4.2;

(c) the performance parameters set out in schedule 4 table S4.3A and S4.3B using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total waste accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(c) any change in the operator's name or address; and

(d) any steps taken with a view to the dissolution of the operator.

In any other case:

(e) the death of any of the named operators (where the operator consists of more than one named individual);

(f) any change in the operator's name(s) or address(es); and

(g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

(a) a decision by the Secretary of State not to re-certify the agreement;

(b) a decision by either the operator or the Secretary of State to terminate the agreement; and

(c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	**Section 6.8 Part A(1)(d)(ii)** *Treatment and processing vegetable raw materials for the production of food or feed at a plant with a finished production capacity exceeding 300 tonnes per day.*	Processing of raw cane sugar for the manufacture of refined and partially refined sugars and sugar products in solid and liquid form.	From receipt of raw materials to despatch of finished products. Production capacity is limited to 4658 tonnes per day.
AR2	**Section 1.1 Part A(1)(a)** *Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.*	**Large Combustion Plant (LCP):** LCP 392: 2 x 60 MWth Aalborg boilers for production of steam. Boilers are fuelled by natural gas. LCP 393**:** Combined heat and power (CHP) plant and waste heat recovery boiler capable of auxiliary and supplementary firing for the production of electricity and steam firing in: CCGT mode: Operation of a combined cycle gas power plant to produce electricity and steam (64 MWth) TEG Mode: Operation of the gas turbine with heat directed to the WHRB, operating as a heat exchanger to produce electricity and steam. OCGT mode: Operation of an open cycle power plant to produce electricity (21 MWth). WHB Auxiliary mode: Operation of a waste heat boiler to produce steam. **Other combustion plant:** 1 x 0.5 MWth natural gas fired hot water boiler. 1 x 0.6 MWth natural gas fired co crystallisation pilot plant boiler. 1 x 0.75 MWth “black start” emergency diesel generator.	From receipt fuel to discharge of exhaust gases to air and despatch of wates generated, where applicable. OCGT is for on-site electricity demands only. Export to the National Grid shall be limited to such quality to achieve minimum start up load (MSUL). OCGT operation excludes elective power generation as part of National Grid peak demand reduction scheme. Gas oil firing is limited to <1500 hours per year for LCP392 and LCP393. WHB Auxiliary forced draft (FD) is for emergency use only and is limited to operate under the conditions agreed as per the outcome of IC33.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR3	**Section 5.4 Part A(1)(a)(ii)** *Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by physico-chemical treatment.*	Physico-chemical treatment of effluent by means of pH correction, prior to discharge to sewer.	From generation and collection of aqueous wastes to release to sewer, and solid waste arising sent for offsite disposal.
AR4	**Section 3.1 Part B(c)** *Slakings lime for the purpose of making calcium hydroxide or calcium magnesium hydroxide.*	Operation of lime slaking for the production of calcium hydroxide for use in the sugar refining process.	From the transfer of lime to the slaker to its use in the sugar making process, the emission of dust to air and the disposal of waste arising.
	Directly Associated Activity		
AR5	Raw material storage and handling	Storage and handling of raw materials at the installation	From receipt of raw materials to dispatch of final product.
AR6	Storage and use of chemicals and oils	Storage and use of chemicals and oils at the installation.	From receipt of chemicals and oils to disposal of wastes arising.
AR7	Waste storage and handling	Storage and handling of waste materials	From generation of waste to storage pending removal for disposal or recovery.
AR8	Surface water drainage	Collection of uncontaminated site surface waters	Handling and storage of site drainage until discharge to sewer.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to questions 2.1 and 2.2 given in section 2.1 and 2.2 of the application	30/03/2005
Response to Regulation 60(1) Notice – Request for information dated 31/10/2014	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (configuration), 6 (MSUL/MSDL), 7 (ELVs) and 8 & 9 (monitoring)	31/03/2015
Receipt of additional information to the Regulation 60(1) notice requested by letter 04/06/2015	Operating techniques identified in response to questions 4 (configuration), 5 (net rated inputs), 6 (MSUL/MSDL), 7 (ELVs), 8 & 9 (monitoring)	Email response 24/07/2015
Application Variation EPR/MP3530HZ/V003	Application forms C2 and C3 and referenced supporting information.	Duly Made 25/04/2016

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application Variation and Partial Surrender EPR/MP3530HZ/V004	Application forms C2 and C3 and referenced supporting information.	Duly Made 02/02/2023
Response to Regulation 61(1) Notice dated 08/06/2022	All parts	04/11/2022
Request for additional information dated 19/03/2024 & 23/04/2024	Supporting documents	12/04/2024
	Updated R61 Response Tool and supporting documents	31/05/2024
	Updated LCP spreadsheet	04/06/2024
Additional information received	Email providing information relating to the combustion plants and operating conditions.	31/07/2024
	Email providing information relation to the LCP operating modes	05/12/2024

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC19	The operator shall submit a written report to the Environment Agency for assessment and written approval. The operator must carry out ambient dust monitoring around the site. The report must contain: • review of the results of the particulate/dust monitoring and the effectiveness of the site's particulate/dust monitoring strategy • proposals for further measures to be undertaken to reduce particulate emissions at the facility (if necessary) and dates for implementation. You must implement the proposals in the report in line with the timescales agreed with the Environment Agency.	19/12/2025 unless otherwise agreed in writing with the Environment Agency
IC20	The operator shall submit, for approval by the Environment Agency, a report demonstrating achievement of the 'Narrative' BAT conclusions as identified in the Food, Drink and Milk Bref published on 4 December 2019 where BAT is currently not demonstrated or achieved. The report shall include, but not be limited to, the following: • Methodology applied for achieving BAT • Demonstrating that BAT has been achieved. The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to BATc 6 – Energy Efficiency Plan. Refer to BAT Conclusions for a full description of the BAT requirement.	19/04/2025 unless otherwise agreed in writing with the Environment Agency
IC21	The Operator shall submit an updated Noise Management Plan to the Environment Agency for technical assessment and approval, demonstrating compliance against BAT 13 for the FDM industries. Further guidance on NMPs can be found on our website Noise and vibration management: environmental permits - GOV.UK (www.gov.uk) The updated plan must include the following elements: • a protocol containing actions and timelines; • a protocol for conducting noise emissions monitoring; • a protocol for response to identified noise events, eg complaints; • a noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures. The noise management plan should be reviewed at least annually to ensure continued compliance against BAT 13 as described above. You must implement the plan as agreed, and from the date stipulated by the Environment Agency.	19/10/2025 unless otherwise agreed in writing with the Environment Agency
IC22	The operator shall submit, for approval by the Environment Agency, a report which determines the net electrical efficiency and/or the net total fuel utilisation and/or the net mechanical energy efficiency of the gasification, IGCC and/or combustion units by carrying out a performance test at full load (1), according to EN standards, after the commissioning of the unit and after each modification that could significantly affect the net electrical efficiency and/or the net total fuel utilisation and/or the net mechanical energy efficiency of the unit. The report shall demonstrate compliance with LCP BAT2. Refer to BAT Conclusions for a full description of the BAT requirement.	19/04/2025 unless otherwise agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC23	The operator shall submit a report to demonstrate proposed equipment to fit MCERT flue gas flow measurement instruments to allow accurate continous monitoring, to demonstrate compliance with LCP BAT3. Refer to BAT Conclusions for a full description of the BAT requirement. The operators report shall also include proposals to ensure the understanding of the flow split between emission points A2 and A3, when LCP393 is operating in TEG mode, using CEMS.	19/04/2025 unless otherwise agreed in writing with the Environment Agency
IC24	The operator shall submit, for approval by the Environment Agency, a report demonstrating compliance with net electirical efficiency, net total fuel utilisation, and net mechanical energy efficency BAT-AEELs LCP BAT 40 are achieved for LCP392 and LCP393. Refer to BAT Conclusions for a full description of the BAT requirement.	4 months after the completion of IC22 unless otherwise agreed in writing with the Environment Agency
IC25	The operator shall submit, for approval by the Environment Agency, a report demonstrating appropriate limit for the yearly NOx for the LCP393 when operating as a CCGT firing on natural gas, in line with LCP BAT44, table 24. This should be based on the net fuel efficiency. Refer to BAT Conclusions for a full description of the BAT requirement.	4 months after the completion of IC24 unless otherwise agreed in writing with the Environment Agency
IC26	The Operator shall submit a written report to the Environment Agency for technical assessment and approval on the feasibility of implementing a one or a combination of techniques described in LCP BAT41. Justification is required where these techniques are not utilised on-site. Refer to BAT Conclusions for a full description of the BAT requirement.	19/12/2025 unless otherwise agreed in writing with the Environment Agency
IC27	The operator shall produce a climate change adaptation plan, which will form part of the EMS. The plan shall include, but not be limited to: • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the operations within the installation; • An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation. The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	19/12/2025 unless otherwise agreed in writing with the Environment Agency
IC28	The Operator shall submit a written report to the Environment Agency for technical assessment and approval on the feasibility of installing buffer storage in line with FDM BATc11. Justification is required where no on-site buffer storage is provided, taking into account the nature of the wastewater and risk of uncontrolled discharge at the site.	19/06/2026 unless otherwise agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC29	The Operator shall undertake a survey of the primary, secondary and tertiary containment at the site and review measures against relevant standard including: • CIRIA Containment systems for the prevention of pollution (C736) – Secondary, tertiary and other measures for industrial and commercial premises, • EEMUA 159 - Above ground flat bottomed storage tanks The operator shall submit a written report to the Environment Agency approval which outlines the results of the survey and the review of standard and provide details of • current containment measures • any deficiencies identified in comparison to relevant standards, • improvements proposed • time scale for implementation of improvements. The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.	19/06/2026 unless otherwise agreed in writing with the Environment Agency
IC30	The operator shall submit to the Environment Agency for approval a risk assessment considering the possibility of soil and groundwater contamination at the installation where the activity involves the use, production or release of a hazardous substances (as defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures). A stage 1-3 assessment should be completed (as detailed within the EC Commission Guidance 2014/C 136/-3) as follows; Stage 1 – Identify hazardous substance(s) used / stored on site. Stage 2 – Identify if the hazardous substance(s) are capable of causing pollution. If they are capable of causing pollution, they are then termed Relevant Hazardous Substances (RHS). Stage 3 – Identify if pollution prevention measures & drains are fit for purpose in areas where hazardous substances are used / stored. If the outcomes of Stage 3 identifies that pollution of soil / ground water to be possible. The operator shall produce and submit a monitoring plan to the Environment Agency for approval detailing how the substance(s) will be monitored to demonstrate no pollution. The operator shall commence monitoring of the RHS within a timescale as agreed by the Environment Agency.	19/12/2025 unless otherwise agreed in writing with the Environment Agency
IC31	The operator shall submit a written report to the Environment Agency for assessment and written approval to define when dry low NOx operation is effective in relation to LCP393. The report shall include: • an output load or operational parameters to justify when the dry low NO_x operation is effective. • the NO_x profile through effective dry low NO_x to 70% and then to full load.	19/12/2025 unless otherwise agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC32	The operator shall submit a written report to the Environment Agency for assessment and written approval to define the minimum start-up and shut-down loads. The report shall include a written justification of the "minimum start-up load (MSUL)" and "minimum shut-down load (MSDL)", for each unit within the LCPs LCP392 and LCP393 as required by the Implementing Decision 2012/249/EU in terms of: i. the output load (i.e. electricity, heat or power generated) (MW); and ii. this output load as a percentage of the rated thermal output of the combustion plant (%). and / or iii. at least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.	19/12/2025 unless otherwise agreed in writing with the Environment Agency
IC33	The operator shall submit a written operating techniques document to the environment agency for assessment and written approval. The document shall define the conditions when the waste heat boiler (WHB) is operated in forced draft (FD) firing mode.	19/06/2025 unless otherwise agreed in writing with the Environment Agency
IC34a	The operator shall submit a written operating techniques document, for review which: a) provides clarification for when sucrose may be present within the cooling water discharged via W1 b) demonstrates the controls currently in place to minimise sucrose entering the cooling water	19/10/2025 unless otherwise agreed in writing with the Environment Agency
IC34b	The operator shall submit a written report to the Environment Agency for assessment and written approval, which provides an environmental assessment of the receiving water body in relation to the discharge of sucrose from emission point W1 on the receiving water body. The report must contain: • a quantitative risk assessment using the methodology set out in H1 annex D2: assessment of sanitary and other pollutants in surface water discharges - GOV.UK • If the assessment determines the existing limit could lead to deterioration of the receiving water, the report should also propose an acceptable limit for sucrose concentration within the discharge. • Where the results of the risk assessment show that significant/ adverse impact are likely from the emissions of any of the parameters, the operator shall provide proposals and/or additional measures required to ensure discharges have insignificant impact on receiving waters, along with timescales for implementation. The operator shall implement the proposals in the report in line with the timescales agreed in writing with the Environment Agency.	12 months from the completion of IC34a unless otherwise agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC34c	The operator shall implement any improvements identified within the report approved under IC34c, if required, in accordance with the Environment Agency's written approval and provide written confirmation to the Environment Agency that the improvements have been completed.	4 months from the report in relation to IC34b being approved by the Environment Agency, or such other date as agreed in writing with the Environment Agency

Table S1.4 Start-up and Shut-down thresholds – unless otherwise agreed in writing by the Environment Agency		
Emission Point and Unit Reference	**"Minimum Start-Up Load"** **Load in MW and as percent of rated power output (%)**	**"Minimum Shut-Down Load"** **Load in MW and as percent of rated power output (%)**
A1 LCP 392 Aalborg Boilers	17.5 MW; 29.2% (of 60 MW) 17.5 MW is 20t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32	17.5 MW; 29.2% (of 60 MW) 17.5 MW is 20t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing with by Environment Agency, following the outcome of improvement condition IC32
A2 LCP 393 GT/WHB CCGT	26.2 MW; 42.3% (of 64 MW) 26.2 MW is 30t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32	26.2 MW; 42.3% (of 64 MW) 26.2 MW is 30t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32
A2 LCP 393 WHB Auxiliary firing (FD)	17.5 MW; 30.7% (of 57MW) 17.5 MW is 20t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32	17.5 MW; 30.7% (of 57MW) 17.5 MW is 20t/h steam at 4.5 Mpa and 377ºC Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32
A3 LCP 393 OCGT	3 MWelec; 50.0% (of 6.0 MWelec) Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32	3 MWelec; 50.0% (of 6.0 MWelec) Or to be agreed in writing by the Environment Agency, following the outcome of improvement condition IC32

Table S1.5 Dry Low NOx effective definition	
Emission Point and Unit Reference	**Dry Low NOx effective definition** **Load in MW and as percent of rated power output (%)**
A2 LCP393	To be agreed in writing by the Environment Agency, following the outcome of improvement condition IC31 in table S1.3 of this permit. Until IC31 has been completed, compliance will be assessed against the limits in table S3.1 for 70% to baseload.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Gas oil / HVO or equivalent substitute to be agreed in writing with the Environment Agency	Not exceeding 0.1% w/w sulphur content

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	LCP No. 392 Aalborg boilers firing on natural gas (2 x 60 MWth Aalborg boilers)	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	100 mg/m^3	Yearly average	Continuous	BS EN 14181
			100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m^3	Daily average or average over the sampling period	Continuous	BS EN 14181
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	40 mg/m^3	Yearly average	Continuous	BS EN 14181
			100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur dioxide	35 mg/m^3	Periodic	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Particulate matter	5 mg/m^3	Periodic	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A1 [Point A1 on site plan in schedule 7]	LCP No. 392 Aalborg boilers firing on gas oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	200 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			145 mg/m^3	Daily average or average over the sampling period	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	(2 x 60 MWth Aalborg boilers)		400 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	125 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			125 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			250 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	200 mg/m^3	Daily average or average over the sampling period	At least every 6 months [Note 2]	BS EN 14791
		Particulate matter	25 mg/m^3	Daily average or average over the sampling period	At least every 6 months [Note 2]	BS EN 13284
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 [Point A2 on site plan in schedule 7]	LCP No. 393 CCGT Combined heat and power (CHP) plant and waste heat recovery boiler (65MWth) GT and WHB fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	Limit to be agreed via the completion of IC25	Yearly average	Continuous	BS EN 14181
			75 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			82.5 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			150 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			100 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	No limit set	Periodic	6 monthly	Concentration by calculation, as agreed in writing with the Environment Agency
		Particulate matter	No limit set	Periodic	6 monthly	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 [Point A2 on site plan in schedule 7]	LCP No. 393 CCGT Combined heat and power (CHP) plant and waste heat recovery boiler (65MWth) WHB fired on natural gas GT fired on gas oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	90 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			99 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			180 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	66 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14791
		Dust	10 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 13284
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 [Point A2 on site plan in schedule 7]	LCP No. 393 Waste heat recovery boiler auxiliary firing (FD) on natural gas [Note 3]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			110 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	35 mg/m^3	Daily mean of validated hourly averages	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Particulate matter	5 mg/m^3	Periodic	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 [Point A3 on site plan in schedule 7]	TEG mode Gas Turbine firing on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 Note 5	Yearly average	Continuous	BS EN 14181
			-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			55 mg/m^3 Note 5	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			100 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur dioxide	-	Daily mean of validated hourly averages	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency
		Particulate matter	-	Periodic	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 [Point A3 on site plan in schedule 7]	TEG mode Gas Turbine firing on gas oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	--	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			380 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			--	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			125 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	66 mg/m^3	Daily mean of validated hourly averages	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency
		Particulate matter	10 mg/m^3	Periodic	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 [Point A3 on site plan in Schedule 7]	LCP No. 393 Gas Turbine OCGT firing	Oxides of Nitrogen	50 mg/m^3 Note 5	Yearly average	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	on natural gas MSUL/MSDL to baseload	(NO and NO_2 expressed as NO_2)	-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			55 mg/m^3 Note 5	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			100 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	-	Daily mean of validated hourly averages	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Particulate matter	-	Periodic	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Point A3 on site plan in Schedule 7]	LCP No. 393 Gas Turbine OCGT firing on gas oil MSUL/MSDL to baseload	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	--	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			380 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			--	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Carbon Monoxide	-	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			125 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
			-	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		Sulphur dioxide	66 mg/m^3	Daily mean of validated hourly averages	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Particulate matter	10 mg/m^3	Periodic	At least every 6 months [Note 2]	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water vapour	-	-	Continuous As appropriate to reference [Note 1]	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A10	Lime plant abated by bag filters	Particulate matter	20 mg/m^3	Average over sampling period	Annually	BS EN 13284-1
A11 & A12	Building 23 – A & B cooler exhaust abated by wet scrubbers	No parameters set	No limit set	--	--	--
A13	Building 23 – Vacuum cleaning plant exhaust abated by bag filters	No parameters set	No limit set	--	--	--
A14, A15, A16, A17	Building 23 – Dry dust collector A, B, C, D abated by bag filters	No parameters set	No limit set	--	--	--
A18 & A19	Building 23 – Silo C East & West dust collector abated by bag filters	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A20 & A21	Building 23 – Silo A & B West scrubber abated by bag filters	No parameters set	No limit set	--	--	--
A22	Building 23A – I/G receiving vessel exhaust abated by bag filters	No parameters set	No limit set	--	--	--
A23 & A24	Building 23A – Dry dust collector A & B abated by bag filters	No parameters set	No limit set	--	--	--
A25 & A26	Building 54 – Dry dust collector A & B abated by bag filters	No parameters set	No limit set	--	--	--
A27	Building 53 – G5 drier exhaust abated by bag filters	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** [Note 4]	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A28	Building 53 – G1 – G4 drier exhaust abated by rotoclone	Particulate matter	No visible dust	Instantaneous	Daily	Visual inspection
A29	Building 52 – Refinery vacuum cleaner exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A30	Building 52 – Dust receiver exhaust for building 54 and G5 Dry Dust Collectors, abated by bag filters	No parameters set	No limit set	--	--	--
A31	Building 52 – R121 – Rotoclone exhaust abated by rotoclone	Particulate matter	No visible dust	Instantaneous	Daily	Visual inspection

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A32	Building 52 – R122 – Rotoclone exhaust abated by rotoclone	Particulate matter	No visible dust	Instantaneous	Daily	Visual inspection
A33 – A35	Building 20 – SIG dry dust collection plant A exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A36	Building 20 – dry dust collection plant B exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A37	Building 20 – 10kg dry dust collection plant exhaust, abated by bag filters	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A38	Building 20 – Specialties dry dust collection plant exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A39 & A40	Building 20 – vacuum cleaning plant exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A41, A42 & A43	Building 62 – Milling line 1, 2 & 3 exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A44, A45 & A46	Building 62 – Milling line 1, 2 & 3 feed hopper exhaust and explosion vent, abated by bag filters	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A48 & A49	Building 62 – Mill silos exhaust and explosion vent, abated by bag filters	No parameters set	No limit set	--	--	--
A50	Building 62 – 500g line exhaust and explosion vent, abated by bag filters	No parameters set	No limit set	--	--	--
A52	Building 62 – Vacuum cleaning exhaust, abated by bag filters	No parameters set	No limit set	--	--	--
A53	Building 62 – 25kg line exhaust and explosion vent, abated by bag filters	No parameters set	No limit set	--	--	--
A54	Building 62 – Fawerma Line explosion vent, abated by bag filter	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A55 & A56	Building 219 & Building 220 – Tank blowing exhausts, abated by bag filter	No parameters set	No limit set	--	--	--
A65 & A66	B234A Silo D dust extraction unit A & B	Particulate matter	No limit set	--	--	--
A67	Agglomerator – Building 20	Particulate matter	No limit set	--	--	--
A68, A69, A70 & A71	Carbonation process vent 1, 2, 3 & 4	Carbon dioxide	No limit set	--	--	--
A72	Co-crystalline pilot plant steam generator (0.6MW) exhaust	No parameters set	No limit set	--	--	--
A73	Co-crystalline pilot plant dust abatement plant	Particulate matter	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A74	Diesel generator (black start) exhaust	No parameters set	No limit set	--	--	--
A75	Hot water boiler (0.5MW) exhaust	No parameters set	No limit set	--	--	--
A76	Cross Conveyer on the fuel silo – dust collector vent	Particulate matter	No limit set	--	--	--
A77	Biomass Milling Building – dust collector vent	Particulate matter	No limit set	--	--	--
A78 & A79	Raw Sugar Jetty Discharge buckets	Particulate matter	No limit set	--	--	--
A80	Internally venting - bag filter exhaust for the section sheds dust collector	No parameters set	No limit set	--	--	--

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)-these limits do not apply during start up or shut down** Note 4	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A81 & A82	Icing Sugar Silos with cartridge filter abatement	Particulate matter	No limit set	--	--	--

Note 1: The continuous measurement of the water vapour content of the flue-gas is not necessary if the flue-gas is dried before analysis.

Note 2: When an LCP has operated on standby gas oil for more than 10 days during periods of gas supply interruption and where the source is indicated as firing gas oil, periodic monitoring for dust and SO_2 shall be required.

Note 3: WHB Auxiliary firing in an emergency is referenced to 15% O_2.

Note 4: Unless otherwise indicated the limits apply MSUL/MSDL to base load.

Note 5: For plants with a net electrical efficiency (EE) greater than 39 %, a correction factor may be applied to the higher end of the range, corresponding to [higher end] x EE/39, where EE is the net electrical energy efficiency or net mechanical energy efficiency of the plant determined at ISO baseload conditions.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in schedule 7 emission River Thames	Non-evaporative direct cooling water discharge	Discharge volume	63,000 m^3	24-hour period	Continuous	MCERTS flow meter
		Temperature	45°C	Daily average	Continuous	Method as agreed with the Environment Agency
		Heat	No greater than 5 terajoules compared to intake water temperature	Daily average	Continuous	Method as agreed with the Environment Agency
		Sucrose	1 tonne/day Note 1	8 hour composite sample	8 hourly sampling	Method as agreed with the Environment Agency
		Oil or grease	No visible oil or grease	Instantaneous	Weekly	Visual check
Note 1 – To be reviewed in line with IC34b and IC34c.						

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S2 on Sewer Emission Point Plan in schedule 7	Trade effluent and surface water from operational areas	No parameters set	No limit set	--	--	--
S3 on Sewer Emission Point Plan in schedule 7	Trade effluent and surface water from operational areas	No parameters set	No limit set	--	--	--
S5 on Sewer Emission Point Plan in schedule 7	Surface water run off	No parameters set	No limit set	--	--	--

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of nitrogen	A1, A2, A3	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every 6 months for periodic monitoring	1 January, 1 July
		Every year where there is an annual average	1 January
		Every 2 years for concentration by calculation	1 January
Carbon Monoxide	A1, A2, A3	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every 6 months for periodic monitoring	1 January, 1 July
		Every year where there is an annual average	1 January
		Every 2 years for concentration by calculation	1 January
Sulphur dioxide	A1, A2, A3	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every 6 months for periodic monitoring	1 January, 1 July
Particular matter	A1, A2, A3, A10	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Annually for periodic monitoring	1 January, 1 July
Emissions to Water Parameters as required by condition 3.5.1	W1	Annually	1 January

Table S4.2 Annual production/treatment	
Parameter	**Units**
Production of sugar	tonnes

Table S4.3A Large Combustion Plant Performance parameters for reporting to DEFRA		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NOx for each LCP	Annually	t
Total Emissions to Air of SO_2 for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP (Load Factor)	Annually	hr

Table S4.3B Other Performance parameters for reporting to the Environment Agency		
Parameter	**Frequency of assessment**	**Units**
Total sugar losses	Annually	kg/tonnes
Water usage	Annually	m^3
Specific wastewater discharge	Annually	m^3 / tonne of melt
Energy usage	Annually	MWh
Specific energy usage	Annually	MWh/tonne of melt
Annual energy input into GT/HRSG	Annually	MWh
Power generated (on site use)	Annually	GWh
Power generated exported	Annually	GWh
Waste	Annually	tonnes
Food waste	Annually	tonnes

Table S4.4 Reporting forms		
Media/ parameter	**Reporting format**	**Agency recipient**
LCP		
Air & Energy	Form IED AR1 – SO_2, NO_x and dust mass emission and energy. Form as agreed in writing by the Environment Agency. For all LCPs	National and Area Office
LCP	Form IED HR1 – operating hours. Form as agreed in writing by the Environment Agency. For all LCPs	National and Area Office

Table S4.4 Reporting forms		
Media/ parameter	**Reporting format**	**Agency recipient**
Air	Form IED CON 1 – continuous monitoring. Form as agreed in writing by the Environment Agency. CEMs reporting for Utility Boilers Only	Area Office
Air	Form IED CON 2 – continuous monitoring. Form as agreed in writing by the Environment Agency CEMs reporting for Gas Turbines Only	Area Office
Air	Form IED PM1 – discontinuous monitoring and load. Form as agreed in writing by the Environment Agency. Only for sites with periodic monitoring requirements.	Area Office
CEMs	Form IED CEM – Invalidation Log. Form as agreed in writing by the Environment Agency. Only for LCPs with CEMs	Area Office
OTHER		
Air	Air Reporting Form, or other form as agreed in writing by the Environment Agency	Area Office
Water emissions	Water1 Reporting Form, or other form as agreed in writing by the Environment Agency	Area Office
Water usage	Water Usage Reporting Form, or other form as agreed in writing by the Environment Agency	Area Office
Energy usage	Energy Usage Reporting Form, or other form as agreed in writing by the Environment Agency	Area Office
Food Waste	Food waste Reporting Form, or other form as agreed in writing by the Environment Agency	Area Office
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	Area Office

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	

Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“average over the sampling period” means the average value of three consecutive measurements of at least 30 minutes each or as agreed in writing with the Environment Agency.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Commité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“commissioning” means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1 or as agreed with the Environment Agency.

“daily average” means the average over a period of 24 hours of validated hourly averages obtained by continuous measurements.

“disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“DLN” means dry, low NO_x burners.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“Energy efficiency” means the annual net plant energy efficiency, the value for which is calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“Large Combustion Plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input excludes individual combustion plants with a rated thermal input below 15MW.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“Net electrical efficiency” means the ratio between the net electrical output (electricity produced minus the imported energy) and the fuel/feedstock energy input (as the fuel/feedstock lower heating value) at the combustion unit boundary over a given period of time.

“Net mechanical energy efficiency” means the ratio between the mechanical power at load coupling and the thermal power supplied by the fuel.

“Net total fuel utilisation” means the ratio between the net produced energy minus the imported electrical and/or thermal energy and the fuel/feedstock energy input at the gasification unit boundary over a given period of time.

“Net total fuel utilisation” means the ratio between the net produced energy minus the imported electrical and/or thermal energy and the fuel energy input at the combustion unit boundary over a given period of time.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“pests” means Birds, Vermin and Insects.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“SI” means site inspector.

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

When the following terms appear in the waste code list in Schedule 2, table 2.2, for that table, they have the meaning given below:

‘hazardous substance’ means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008.

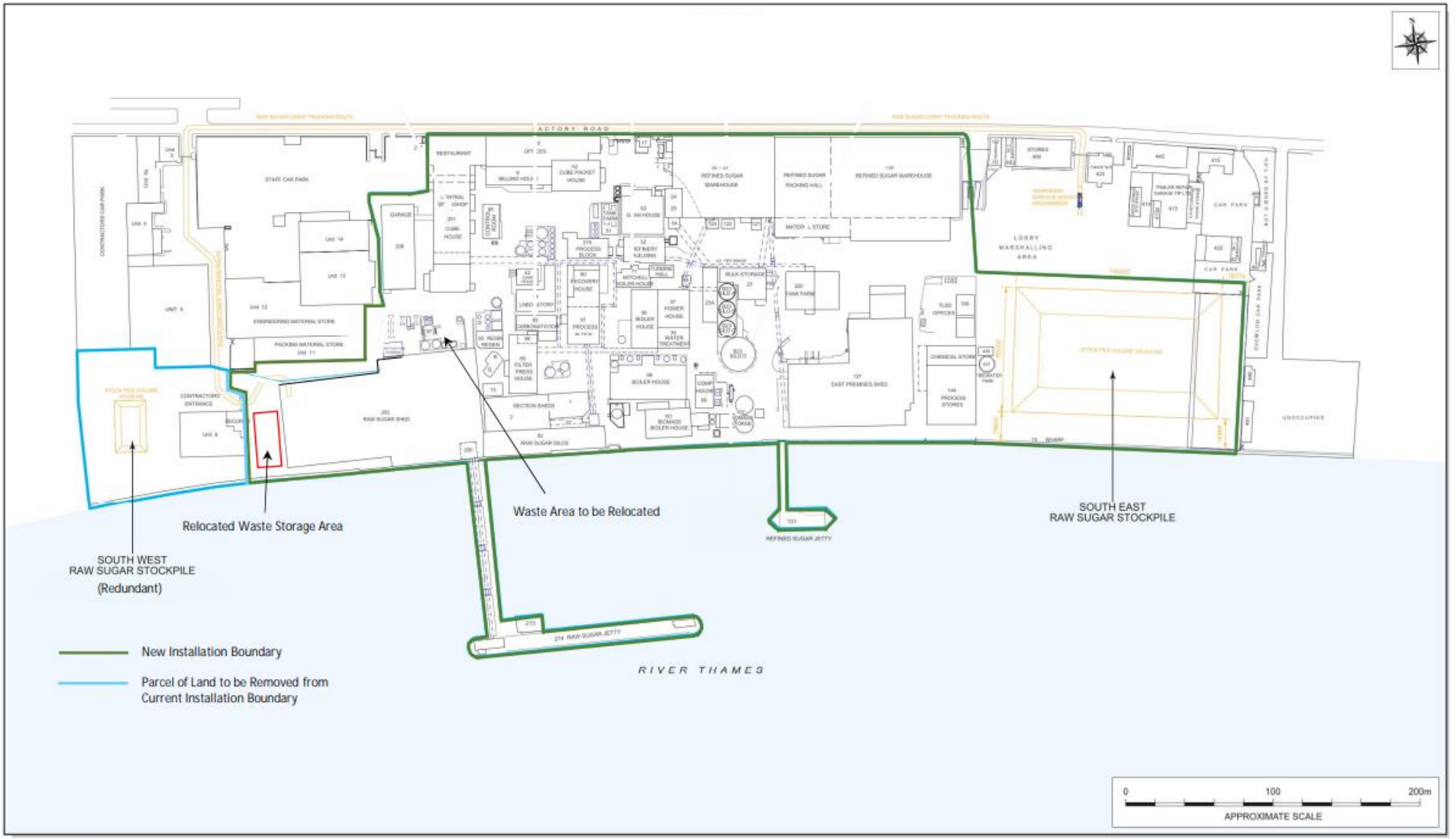
For dioxins/furans the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing.

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
		Humans / Mammals	**Fish**	**Birds**
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

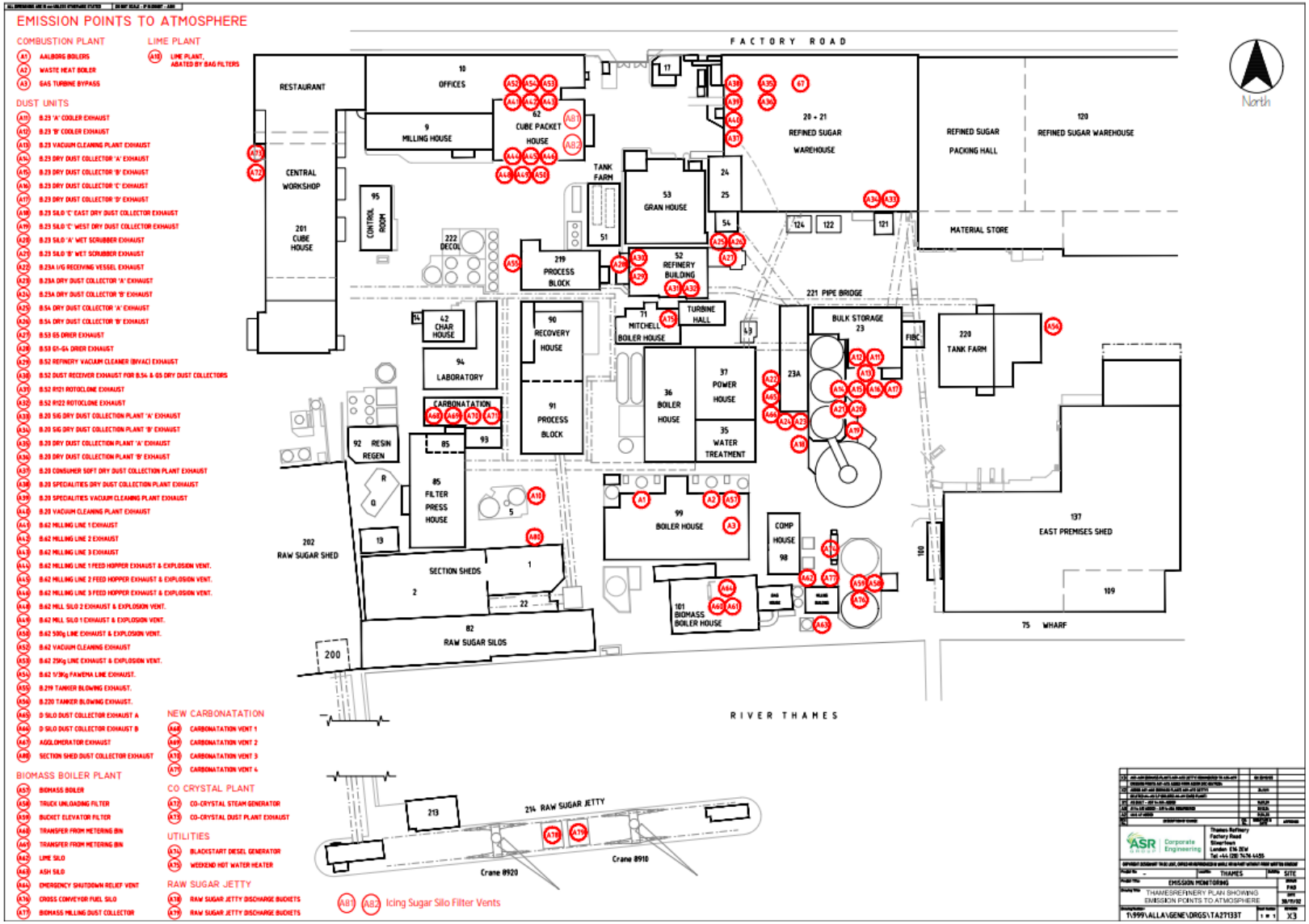
TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.00003	<0.000005	0.00001

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
2,3,3',4,4',5-HxCB (156)		0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)		0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)		0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)		0.00003	<0.000005	0.00001

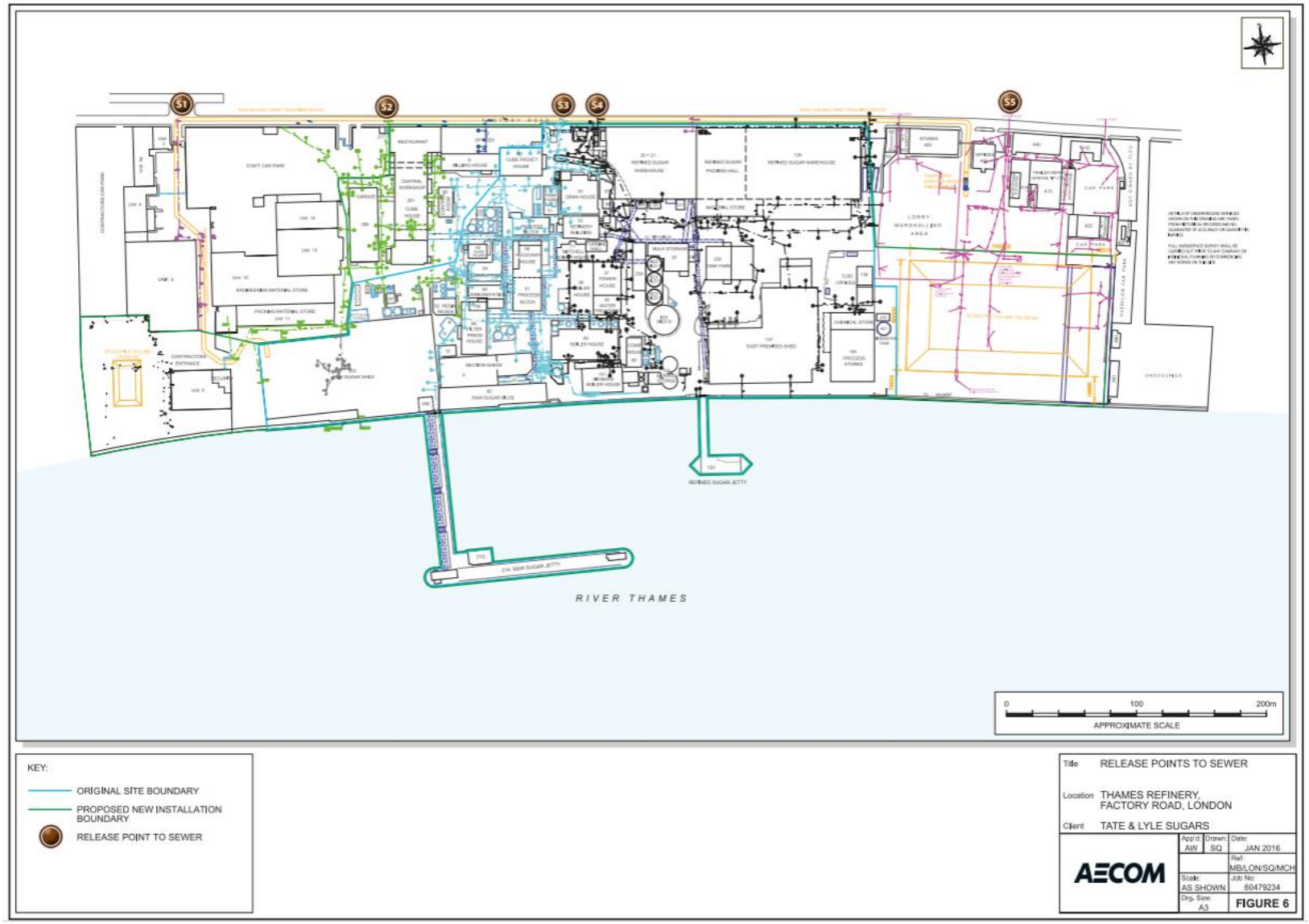
Schedule 7 – Site plan



Air Emission Points Plan



Sewer Emission Point Plan



END OF PERMIT