



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Palm Paper Limited
Saddlebow Paper Mill
Former British Sugar Site
Poplar Avenue
King's Lynn
Norfolk
PE34 3AL

Variation application number

EPR/FP3132UE/V008

Permit number

EPR/FP3132UE

Saddlebow Paper Mill

Permit number EPR/FP3132UE

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2010 (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 that all the conditions of the permit have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made and contains all conditions relevant to this permit.

The requirements of the Industrial Emissions Directive (IED) 2010/75/EU are given force in England through the Environmental Permitting (England and Wales) Regulations 2010 (the EPR) (as amended).

This variation and consolidation implements the requirements for the operation of large combustion plant as set out in the Industrial Emissions Directive (IED) 2010/75/EU. It also modernises all conditions to reflect the conditions contained in our current generic permit template.

The conditions within the permit were have been varied to implement the provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)) for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the IED. The IED makes provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

The Operator has chosen to operate the site LCP units under the ELV compliance route.

The variation notice uses updated LCP numbers in accordance with the most recent DEFRA LCP reference numbers. The LCP reference number for the package boilers has changed as follows:

- LCP230 is changed to LCP257

The new combined cycle gas turbine (CCGT) is referenced as:

- LCP422

LCP442 is a natural gas fired CCGT with a net rated thermal input of 146MWth. LCP257 is comprised of two natural gas fired boilers each with a net rated thermal input of 36MW producing an aggregated net rated thermal input for the LCP of 72MW. LCP257 may also be fired on gas-oil as a back-up fuel.

Emissions from LCP442 will be continuously monitored to ensure compliance with permit emission limit values (ELVs). ELVs for LCP442 have previously been specified in line with those contained in Chapter III of IED through variation EPR/FP3132UE/V007. From 01/01/16 LCP257 will no longer be continuously monitored. As LCP257 is below 100MWth in size, continuous emission monitors (CEMS) are not required under IED. The emissions from LCP257 will be monitored at least every six months and have been amended so that they are in line with the ELVs specified within Chapter III of IED.

The rest of the installation is unchanged and continues to be operated as follows:

Saddlebow Paper Mill is located on the former British Sugar site within the Saddlebow Industrial Estate approximately 1km to the south west of the town of King's Lynn, Norfolk at NGR 561200 317800.

The installation comprises an integrated recovered paper facility which receives around 630,000 tonnes of recycled newspaper and magazines and produces approximately 550,000 tonnes per annum of newsprint for sale into wholesale paper distributors and newspaper outlets. Recovered paper is delivered to the site by road with strict control of vehicles with delivery notes prior to direction to unloading bays where material is unloaded and placed into Recycled Fibre Storage. No material sorting is conducted on site and the quality of the raw material supply is managed by contractual arrangement with suppliers.

Material is fed to the Recycled Fibre Processing plant via a conveyor belt system. The feedstock fibres are converted to a pulp of suitable brightness, purity and consistency, known as "stock", for the manufacture of newsprint via the Paper Production Process, where a single paper machine forms a continuous paper sheet, or web. The web is dried by a combination of steam and hot air. Heat is recovered from the drying section and used to heat process water and buildings.

After drying, the paper undergoes a surface treatment known as calendaring, which consists of smoothing the paper surface between a series of polished metal rollers. The final paper product is trimmed to specific roll sizes and weights according to customer specifications, following which it is wrapped for despatch.

Paper losses, such as the continuous trimming at the edges of the web during the manufacturing process, trimming of product rolls to customer specification and the considerable losses which occur when the web breaks during the manufacturing process, are all recovered for re-pulping in the paper stock preparation area. A high conversion efficiency of recovered paper fibre to finished paper product is therefore maintained.

The installation is a significant water user and abstracts from the River Great Ouse Flood Relief Channel. Abstracted water is treated prior to introduction into the paper production process. There is a comprehensive recycling system which minimises net consumption.

The non-recyclable elements of the waste paper are recovered from the paper production process in the form of paper sludge and rejects which is fed as a fuel to the sludge combustor. Until the commissioning of the sludge combustor the sludge and the rejects will be disposed of off-site. The sludge combustor comprises a fluidised bed combustion unit and boiler raising high pressure steam which is supplied to a back-pressure steam turbine for the generation of electricity. Low pressure steam from the turbine exhaust is fed to the paper process for heating purposes. The combustor provides 20-40% of the steam load and 5-10% of the electricity requirement for the paper mill. This unit is subject to the requirements of Chapter IV of the Industrial Emissions Directive (EC Directive 2010/75/EU) and has continuous emissions monitoring in place.

All process effluent from the paper manufacturing process is directed to the Effluent Treatment Plant where it is subjected to biological waste water treatment prior to discharge to the River Great Ouse. Excess sludge arising from the effluent treatment process will be directed to the sludge combustor where it will be combined with paper sludge and processed as fuel for the combustion unit.

The site has a comprehensive drainage system for the collection and management of storm water run-off which incorporates four pumping stations and two retention basins, providing significant holding capacity in the event of major storm events or a requirement to hold contaminated surface water run-off or firewater. Emergency diesel generators provide a back-up power supply for the pumping stations in the event of a major power failure. The system has the facility to divert contaminated water to the Effluent Treatment Plant. Surface water from higher risk locations, such as chemicals unloading and manoeuvring areas and all sludge handling areas, is permanently routed directly to the Effluent Treatment Plant.

The Effluent Treatment Plant discharges treated process effluent to the River Great Ouse and is the only release to water. There is no discharge to sewer and no release to groundwater.

A CCGT (LCP442) was authorised for construction on land adjacent to the paper mill through variation EPR/FP3132UE/V007. The proposed power plant is designed to burn natural gas in a single CCGT unit with a net rated thermal input of 146 MWth and is being developed to provide steam and electricity in line with the needs of the existing paper mill demand. No energy will be fed into the national grid. Natural gas will be supplied by gas pipeline and will not be stored on site. The CCGT will be fitted with dry, low NO_x burners to minimise the production of nitrogen oxides.

The CCGT comprises air inlet filters, one air compression section, a combustion chamber, one gas turbine generator and exhaust duct. Fuel is burned in the combustion chamber of the gas turbine from where the hot gases expand through the gas turbine to generate electricity. The hot exhaust gases are then used in the heat recovery steam generator (HRSG) to generate high pressure steam, which in turn is used to generate electricity via the steam turbine plant. Exhaust gases are discharged to atmosphere via an 80m high stack. The use of high pressure steam will increase the overall thermal efficiency of the plant.

In addition to LCP442, point source emissions to air from the installation arise from the operation of LCP257 if used during standby operations and the sludge combustor. These emissions comprise combustion gases such as particulate matter, oxides of nitrogen, oxides of sulphur, carbon monoxide and carbon dioxide. Primary fuel for the package boilers is gas, with back-up fuel of gas oil or low sulphur diesel in the event of an interruption to the gas supply. ELVs have also been specified for the use of oil within the package boilers and in addition, the Operator is limited to 500 hours of operation of the boilers using the standby fuel. Primary fuel for the sludge combustor is paper and ink sludge plus sludge from the Effluent Treatment Plant. The support fuel is gas. There is little potential for fugitive emissions to air. Potential for fugitive releases to water and/or groundwater is managed via the design of the drainage system and containment measures.

The River Nar Site of Special Scientific Interest is located approximately 800 metres from the installation. The Wash and North Norfolk Coast Special Area of Conservation (SAC) is situated at just over 6 km distance and the Roydon Common and Dersingham Bog SAC is located at about 7.7 km. There are also two Ramsar sites: the Wash Ramsar at approximately 6 km and the Roydon Common Ramsar at about 7.7 km.

The schedules specify the changes made to the permit.

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 FP3132UE received (EPR reference EPR/FP3132UE/A001) | Duly made 04/11/07 | Application for a paper mill, sludge combustor and CHP Plant |
| Additional information received | 28/08/08 | |
| Permit determined FP3132UE (EPR reference EPR/FP3132UE) | 09/02/09 | Permit issued to Palm Paper Limited |
| Environment Agency Variation determined EPR/FP3132UE/V002 | 28/06/10 | Varied and consolidated permit issued in modern condition format. |
| Environment Agency Paper and Pulp Sector Review 2011 Variation determined EPR/FP3132UE/V003 | 01/03/12 | Varied and consolidated permit issued |
| Variation application EPR/FP3132UE/V004 | Duly made 02/07/12 | Variation for reverse Osmosis plan addition. |
| Additional information received EPR/FP3132UE/V004 | 06/07/12 | H1 assessment |
| Variation EPR/FP3132UE/V004 determined | 11/07/12 | |
| Agency variation determined EPR/FP3132UE/V005 | 28/08/13 | Agency variation to implement the changes introduced by IED |
| Agency Variation determined EPR/FP3132UE/V006 | 08/10/13 | Agency variation to implement the changes introduced by IED |
| Regulation 60 Notice (LCP) sent to the Operator | 08/12/14 | Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. |
| Application EPR/FP3132UE/V007 | Duly made 27/08/15 | Application for addition of a Closed Cycle Gas Turbine. |
| Regulation 60 Notice (LCP) response | 20/10/15 | Response received from the Operator. |
| Additional Regulation 60 Notice (LCP) response | 27/10/15 | Response received from the Operator. |
| Additional information received application EPR/FP3132UE/V007 | 05/11/15 | Confirmation of CCGT stack diameter. |
| Variation determined EPR/FP3132UE/V007 | 18/12/15 | Consolidated permit issued to Palm Paper Limited. (CCGT) |
| Variation determined EPR/FP3132UE/V008 (Billing ref. KP3737AJ) | 22/12/15 | Consolidated permit issued to Palm Paper Limited. (LCP) Variation effective from 01/01/16. |

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

Permit number

EPR/FP3132UE

Issued to

Palm Paper Limited (“the operator”)

whose registered office is

**Saddlebow Paper Mill
Saddlebow Industrial Estate
Poplar Avenue
King's Lynn
Norfolk
PE34 3AL**

company registration number 00813701

to operate an installation at

**Saddlebow Paper Mill
Former British Sugar Site
Poplar Avenue
King's Lynn
Norfolk
PE34 3AL**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

| Name | Date |
|------------------|-------------------|
| Tom Swift | 22/12/2015 |

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit EPR/FP3132UE as a result of an Environment Agency led variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/FP3132UE

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/FP3132UE/V008 authorising,

Palm Paper Limited (“the operator”),

whose registered office is

**Saddlebow Paper Mill
Saddlebow Industrial Estate
Poplar Avenue
King's Lynn
Norfolk
PE34 3AL**

company registration number 00813701

to operate an installation at

**Saddlebow Paper Mill
Former British Sugar Site
Poplar Avenue
King's Lynn
Norfolk
PE34 3AL**

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

| Name | Date |
|-----------|------------|
| Tom Swift | 22/12/2015 |

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 recovered with a high level of energy efficiency and 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”).

2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

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: LCP 422 and LCP 257. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 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: LCP 257. Standby fuel, gas-oil or low sulphur diesel may be used but for no more than 500 hours per year.

2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP 422 and LCP 257. 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 S1.5.

2.3.7 Waste shall only be accepted if:

- (a) it is of a type and quantity listed in schedule 2 tables S2.2 and S2.3; and
- (b) it conforms to the description in the documentation supplied by the producer and holder.

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.
- 2.3.10 Waste shall not be charged, or shall cease to be charged to the sludge combustor, if:
- (a) the combustion chamber temperature is below, or falls below, 850°C; or
 - (b) any continuous emission limit value in schedule 3 table S3.1(b) is exceeded; or
 - (c) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded, other than under abnormal operating conditions; or
 - (d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1(a) are unavailable other than under abnormal operating conditions.
- 2.3.11 The operator shall have at least one auxiliary burner in each line at start up or shut down of the sludge combustor or whenever the operating temperature falls below that specified in condition 2.3.10, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.10 is maintained in the combustion chamber, such burner(s) may be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.
- 2.3.12 The operator shall record the beginning and end of each period of “abnormal operation” for the sludge combustor.
- 2.3.13 During a period of “abnormal operation” for the sludge combustor, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.14 Where, during “abnormal operation”, for the sludge combustor, any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1(a) due to disturbances or failures of the abatement systems, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
 - (b) the cumulative duration of “abnormal operation” periods over 1 calendar year has reached 60 hours;
 - (c) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1(b) due to disturbances or failures of the abatement systems;
 - (d) continuous emission monitors or alternative techniques to demonstrate compliance with the emission limit value(s) for particulates, TOC and / or CO in schedule 3 table S3.1(b), as agreed in writing with the Environment Agency, are unavailable.
- 2.3.15 The operator shall interpret the end of the period of “abnormal operation” for the sludge combustor as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
 - (b) when the operator initiates a shutdown of the waste combustion activity, as described in the application or as agreed in writing with the Environment Agency;
 - (c) when a period of four hours has elapsed from the start of the “abnormal operation”;
 - (d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached.
- 2.3.16 Bottom ash and APC residues from the sludge combustor shall not be mixed.

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.

2.5 Pre-operational conditions

- 2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

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, S3.1(a), S3.1(b), S3.1(c) and S3.2..
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 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, S3.1(a), S3.1(b) and S3.2;
- (b) process monitoring specified in table S3.3;
- (c) residue quality specified in table S3.4.
- 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, S3.1(a), S3.1(b), S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1(a); the Continuous Emission Monitors shall be used such that:
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:
- | | |
|---|-----|
| • Carbon monoxide | 10% |
| • Sulphur dioxide | 20% |
| • Oxides of nitrogen (NO & NO ₂ expressed as NO ₂) | 20% |
| • Particulate matter | 30% |
| • Total organic carbon (TOC) | 30% |
| • Hydrogen chloride | 40% |

- (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5(a);
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour. The number of half-hourly averages so validated shall not exceed 5 per day;
- (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid.

3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III

- 3.6.1 All monitoring required for units LCP 422 and LCP 257 by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.
- 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 S3.1 the validated hourly, monthly 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 (40 minutes). 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.

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 S4.3 using the forms specified in table S4.4 of that schedule.
- (d) the functioning and monitoring of the incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

- 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 amount 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 (a)(i) 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 listed in Schedule 1 of the EP Regulations | Description of specified activity | Limits of specified activity |
| Section 6.1 A(1)(b): Producing, in industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day on a single paper machine | An integrated recovered paper facility which receives around 630,000 tonnes of recycled newspaper and magazines and produces approximately 550,000 tonnes per annum of newsprint. | From receipt of recycled waste paper and other raw materials to despatch of finished paper Waste types as specified in Table S2.2 |
| Section S1.1 A(1)(a): Burning fuel in an appliance with a rated thermal input of 50 megawatts or more. | LCP 422 (LCP unit 1): CCGT for production of steam and electricity (emission point A5): Operation of a combined cycle gas turbine (CCGT) with a net rated thermal input of 146MW and associated infrastructure including steam turbine and heat recovery steam generator. LCP 257 (LCP units 2 and 3): Standby boilers for production of steam (emission point A3): Operation of two gas-fired package boilers for the generation of process steam, including firing on gas oil during periods of interrupted gas supply, each with a net rated thermal input of 36MW producing an aggregate net rated thermal input of 72MW. | From receipt of gas, gas oil (as standby fuel for package boilers), water and other raw materials to transfer of steam to the process including storage of wastes |
| Section 5.1 A(1)(b): The incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 3 tonnes per hour. | Operation of a fluidised bed paper sludge combustor for the generation of process steam and electricity. | From receipt of paper to storage and despatch of combustion bottom ash and fly ash Waste types and quantities as specified in Table S2.3 |
| Section 5.4A(1)(a)(i): Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by biological treatment. | Operation of the Effluent Treatment Plant for the biological treatment and disposal of waste waters. | |
| Directly Associated Activity | | |
| Directly associated activity | Treatment of water | From the treatment |

| Table S1.1 activities | | |
|--|---|---|
| Activity listed in Schedule 1 of the EP Regulations | Description of specified activity | Limits of specified activity |
| | abstracted from the Great Ouse Flood Relief Channel | of abstracted water to its transfer into the process |
| Directly associated activity | Surface water collection and discharge | From collection of surface water to discharge from installation |

| Table S1.2 Operating techniques | | |
|---|--|---------------------------|
| Description | Parts | Date Received |
| Application | Main Application Section 2.3, excluding sections 2.3.1.4, 2.3.1.5 and 2.3.1.6; Main Application Section 2.4; Supporting Documents Reference Numbers 2, 3, 18, 19, 20, 21, 22, 23 and 26. | 04/11/07 |
| Schedule 4 Notice Request for Further Information dated 17/07/08 | Response to questions 3 - 7, 10, 15, and 18. | 28/08/08 |
| Application EPR/FP3132UE/V004 | Supplementary application document entitled Reverse Osmosis Plant document reference NCC2. | Duly made 02/07/12 |
| Application EPR/FP3132UE/V004 | Duly making responses 1, 2 and 4. | Duly made 02/07/12. |
| Environmental H1 assessment and worst case operating conditions | All | Submission dated 06/07/12 |
| Application EPR/FP3132UE/V007 | Part C2 and C3 of the application and all referenced supporting documentation. | Duly made 27/08/15 |
| Response to regulation 60(1) Notice – request for information dated 08/12/14 | Compliance route and operating techniques identified in response to questions 2 (compliance route), 4 (type of combustion unit), 5 (thermal input), 6 (minimum start up load and minimum shut down load), 11 (monitoring). | Received 20/10/15 |
| Receipt of additional information to the regulation 60(1) Notice dated 18/08/15 | Operating techniques identified in response to question 6 (minimum start up load and minimum shut down load). | Received 27/10/15 |

| Table S1.3 Improvement programme requirements | | |
|--|---|-------------|
| Reference | Requirement | Date |
| IC01 | The operator shall submit a written report for Environment Agency approval. The report shall confirm that the monitoring for flow rate and pH, of point source emissions to water, is undertaken using equipment that has been approved as certified to the MCERTS performance standard through an accredited on-site inspection. | Complete |

| Table S1.3 Improvement programme requirements | | |
|--|---|--|
| Reference | Requirement | Date |
| IC02 | <p>The Operator shall submit a summary report following a review of Best Available Techniques for energy supply for the installation.</p> <p>The scope of the review shall include, but not be restricted to, options for:</p> <ul style="list-style-type: none"> • energy recovery from sludge/ rejects from the mill; • on-site Combined Heat & Power generation (including biomass); • provision of energy from available external suppliers. <p>The report shall provide a cost/benefit assessment for the identified options and include recommendations with timescales for implementation."</p> | Complete |
| IC03 | <p>The Operator shall prepare and submit a comprehensive noise assessment report undertaken in accordance with the procedures given in BS4142:2014 (Methods for rating and assessing industrial and commercial sound). The assessment shall include the identification and assessment of the impact of noise emissions upon surrounding sensitive receptors arising from the operation of the CCGT.</p> <p>In the event that the report shows that noise could have a significant impact, the report shall include proposals for the further attenuation and/or management of noise and shall include a timescale, to be agreed with the Environment Agency, for the implementation of the proposed measures.</p> | 3 months after completion of commissioning of CCGT |
| IC04 | <p>The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for LCP 422 as required by the Implementing Decision 2012/249/EU in terms of:</p> <ol style="list-style-type: none"> 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 (%). <p>And / Or</p> <ol style="list-style-type: none"> 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. | 1 month after completion of commissioning of CCGT |

| Table S1.4 Pre-operational measures for future development | | |
|---|-----------------------------|--|
| Reference | Operation | Pre-operational measures |
| PO1 | Installation of CCGT LCP422 | <p>The operator shall submit a report to the Environment Agency providing detailed designs for the new gas turbine including drainage systems and site layout plan. The operator shall undertake a review of the final detailed design/ plans for the new unit prior to construction to ensure that:</p> <ol style="list-style-type: none"> 1) the final design will meet the requirements of BAT; 2) the application still accurately reflects the final operating proposals; and 3) the environmental impact assessment still accurately reflects the predicted impacts from the proposal. <p>The operator shall submit a written report to the Environment Agency for approval, 6 months prior to construction, detailing the findings of this review.</p> |

| Table S1.5 Start-up and Shut-down thresholds | | |
|---|--|--|
| Emission Point and Unit Reference | “Minimum start up load” Load in MW and as percent of rated power output (%) and steam flow rate in tonnes/hour | “Minimum shut-down load” Load in MW and as percent of rated power output (%) and steam flow rate in tonnes/hour |
| Emission point A5: LCP422 Unit 1 | To be agreed in writing with the Environment Agency, following the outcome of improvement condition IC04. | To be agreed in writing with the Environment Agency, following the outcome of improvement condition IC04. |
| Emission point A3: LCP257 Units 2 and 3 | <ul style="list-style-type: none"> • >7.2 MWth load • >20% of rated power output • >10.5 t/h steam flow rate | <ul style="list-style-type: none"> • <7.2 MWth load • <20% if rated power output • <10.5 t/h steam flow rate |

Schedule 2 – Waste types, raw materials and fuels

| Table S2.1 Raw materials and fuels | |
|---|------------------------|
| Raw materials and fuel description | Specification |
| Gas oil | < 0.1% sulphur content |

| Table S2.2 Permitted waste types and quantities for production of recycled newsprint | |
|---|--|
| Maximum quantity | 630,000 tonnes per annum |
| Waste code | Description |
| 20 01 01 | Paper and Cardboard – Municipal Waste |
| 19 12 01 | Paper and Cardboard – From the Mechanical Treatment of Waste |

| Table S2.3 Permitted waste types and quantities for fluidised bed paper sludge combustor | |
|---|---|
| Maximum quantity | 230,000 tonnes per annum of sludge to be combusted |
| Waste code | Description |
| 03 03 05 | Deinking sludges from paper recycling |
| 03 03 07 | Mechanically separated rejects from pulping of waste paper and cardboard |
| 03 03 10 | Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation |
| 03 03 11 | Sludges from on-site effluent treatment other than those in 03 03 10 |

Schedule 3 – Emissions and monitoring

| Table S3.1 Point source emissions to air from large combustion plant | | | | | | |
|--|---|---|---|---|----------------------|-------------------------------|
| Emission point ref. & location | Parameter | Source | Limit (including unit)-these limits do not apply during start up or shut down | Reference period | Monitoring frequency | Monitoring standard or method |
| A5 [Point A5 on site plan in Schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | LCP No. 422 Gas turbine fired on natural gas | 50 mg/m ³ 70% to base load ¹ | Monthly mean of validated hourly averages | Continuous | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | LCP No. 422 Gas turbine fired on natural gas | 55 mg/m ³ 70% to base load ¹ | Daily mean of validated hourly averages | Continuous | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | LCP No. 422 Gas turbine fired on natural gas | 100 mg/m ³ 70% to base load ¹ | 95% of validated hourly averages within a calendar year | Continuous | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Carbon monoxide | LCP No. 422 Gas turbine fired on natural gas | 100 mg/m ³ 70% to base load ¹ | Monthly mean of validated hourly averages | Continuous | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Carbon monoxide | LCP No. 422 Gas turbine fired on natural gas | 110 mg/m ³ 70% to base load ¹ | Daily mean of validated hourly averages | Continuous | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Carbon monoxide | LCP No. 422 Gas turbine fired on natural gas | 200 mg/m ³ 70% to base load ¹ | 95% of validated hourly averages within a calendar year | Continuous | BS EN 14181 |

| Table S3.1 Point source emissions to air from large combustion plant | | | | | | |
|---|---|--|--|-------------------------|--|--|
| Emission point ref. & location | Parameter | Source | Limit (including unit)-these limits do not apply during start up or shut down | Reference period | Monitoring frequency | Monitoring standard or method |
| A5 [Point A5 on site plan in Schedule 7] | Sulphur dioxide | LCP No. 422 Gas turbine fired on natural gas | - | - | At least every 6 months | Concentration by calculation, as agreed in writing with the Environment Agency |
| A5 [Point A5 on site plan in Schedule 7] | Oxygen | LCP No. 422 Gas turbine fired on natural gas | - | - | Continuous As appropriate to reference | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Water vapour | LCP No. 422 Gas turbine fired on natural gas | - | - | Continuous As appropriate to reference | BS EN 14181 |
| A5 [Point A5 on site plan in Schedule 7] | Stack gas temperature | LCP No. 422 Gas turbine fired on natural gas | - | - | Continuous As appropriate to reference | Traceable to national standards |
| A5 [Point A5 on site plan in Schedule 7] | - | LCP No. 422 Gas turbine fired on natural gas | - | - | Pre-operation and when there is a significant operational change | BS EN 15259 |
| A3 [Point A3 on site plan in schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | LCP No. 257 Boiler plant fired on natural gas | 110 mg/m ³ MSUL/MSDL to base load | - | At least every 6 months | BS EN 14792 |

| Table S3.1 Point source emissions to air from large combustion plant | | | | | | |
|---|---|--|--|-------------------------|-----------------------------|--|
| Emission point ref. & location | Parameter | Source | Limit (including unit)-these limits do not apply during start up or shut down | Reference period | Monitoring frequency | Monitoring standard or method |
| A3 [Point A3 on site plan in schedule 7] | Carbon monoxide | LCP No. 257 Boiler plant fired on natural gas | 30 mg/m ³ MSUL/MSDL to base load | - | At least every 6 months | BS EN 15058 |
| A3 [Point A3 on site plan in schedule 7] | Sulphur dioxide | LCP No. 257 Boiler plant fired on natural gas | - | - | At least every 6 months | Concentration by calculation, as agreed in writing with the Environment Agency |
| A3 [Point A3 on site plan in schedule 7] | Dust | LCP No. 257 Boiler plant fired on natural gas | - | - | At least every 6 months | Concentration by calculation, as agreed in writing with the Environment Agency |
| A3 [Point A3 on site plan in schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | LCP No. 257 Boiler plant fired on gas-oil or low sulphur diesel | 400 mg/m ³ MSUL/MSDL to base load | - | At least every 6 months | BS EN 14792 |
| A3 [Point A3 on site plan in schedule 7] | Sulphur dioxide | LCP No. 257 Boiler plant fired on gas-oil or low sulphur diesel | 344 mg/m ³ MSUL/MSDL to base load | - | At least every 6 months | BS EN 14791 |
| A3 [Point A3 on site plan in schedule 7] | Dust | LCP No. 257 Boiler plant fired on gas-oil or low sulphur diesel | 33 mg/m ³ MSUL/MSDL to base load | - | At least every 6 months | BS EN 13284-1 |

| Table S3.1 Point source emissions to air from large combustion plant | | | | | | |
|---|-------------------|--|--|-------------------------|--|--------------------------------------|
| Emission point ref. & location | Parameter | Source | Limit (including unit)-these limits do not apply during start up or shut down | Reference period | Monitoring frequency | Monitoring standard or method |
| A3 [Point A3 on site plan in schedule 7] | Oxygen | LCP No. 257 Boiler plant fired on natural gas or low sulphur diesel | - | - | Periodic As appropriate to reference | BS EN 14789 |
| A3 [Point A3 on site plan in schedule 7] | Water vapour | LCP No. 257 Boiler plant fired on natural gas or low sulphur diesel | - | - | Periodic As appropriate to reference | BS EN 14790 |
| A3 [Point A3 on site plan in schedule 7] | - | LCP No. 257 Boiler plant fired on natural gas or low sulphur diesel | - | - | Pre-operation and when there is a significant operational change | BS EN 15259 |
| A1 [labelled as A1 on site plan in schedule 7] | No parameters set | Standby Diesel Generator Exhaust | No limits set | - | - | - |
| | | Standby Diesel Sprinkler Pump Exhaust | No limits set | - | - | - |
| Note 1: This ELV applies when the load is >70% throughout the reference period. | | | | | | |

Table S3.1(a) Point source emissions to air from sludge combustor except during abnormal operation – emission limits and monitoring requirements

| Emission point ref. & location | Parameter | Source | Limit (incl. unit) [Note 1] | Reference period | Monitoring frequency | Monitoring standard or method [Note 2] |
|---|---|--|------------------------------|--|----------------------|--|
| A4 [labelled as A4 on site plan in Schedule 7] | Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) | Sludge Combustor | 200 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 400 mg/m ³ | ½-hr average | | |
| | Sulphur dioxide (SO ₂) | | 50 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 200 mg/m ³ | ½-hr average | | |
| | Particulate matter | | 10 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 30 mg/m ³ | ½-hr average | | |
| | Carbon monoxide (CO) | | 50 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 100 mg/m ³ | ½-hr average | | |
| | Hydrogen chloride (HCl) | | 10 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 60 mg/m ³ | ½-hr average | | |
| | Hydrogen fluoride (HF) | | 1 mg/m ³ | Periodic over minimum 1-hour period | Bi-annually | ISO 15713 |
| | Total Organic Carbon (TOC) | | 10 mg/m ³ | Daily average | Continuous | BS EN15267-3 |
| | | | 20 mg/m ³ | ½-hr average | | |
| | Dioxins and furans (I-TEQ) [Note 4] | | 0.1 ng/m ³ | Periodic over minimum 6 hours, maximum 8 hour period | Bi-annually | BS EN 1948 1-3 |
| | Cadmium and Thallium and their compounds (total) [Note 3] | | 0.05 mg/m ³ total | Periodic over minimum 30 minute, maximum 8 hour period | Bi-annually | BS EN 14385 |
| | Mercury and its compounds (expressed as mercury) [Note 3] | | 0.05 mg/m ³ total | Periodic over minimum 30 minute, maximum 8 hour period | Bi-annually | BS EN 13211 |
| Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total) [Note 3] | 0.5 mg/m ³ | Periodic over minimum 30 minute, maximum 8 hour period | Bi-annually | BS EN 14385 | | |

Table S3.1(a) Point source emissions to air from sludge combustor except during abnormal operation – emission limits and monitoring requirements

| Emission point ref. & location | Parameter | Source | Limit (incl. unit) [Note 1] | Reference period | Monitoring frequency | Monitoring standard or method [Note 2] |
|--------------------------------|--|--------|-----------------------------|--|----------------------|--|
| | Specific Polycyclic Aromatic Hydrocarbons (PAHs), as defined in schedule 6 | | No limit set | Periodic over minimum 30 minute, maximum 8 hour period | Bi-annually | BS ISO 11338-1 and BS-ISO 11338-2 |
| | Dioxins / furans (WHO-TEQ Humans / Mammals) [Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) |
| | Dioxins / furans (WHO-TEQ Fish) [Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) |
| | Dioxins / furans (WHO-TEQ Birds) [Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) |
| | Dioxin like PCBs (WHO-TEQ Humans / Mammals) [Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) and BS EN TS 1948-4 |

| Table S3.1(a) Point source emissions to air from sludge combustor except during abnormal operation – emission limits and monitoring requirements | | | | | | |
|---|--|---------------|------------------------------------|--|-----------------------------|--|
| Emission point ref. & location | Parameter | Source | Limit (incl. unit) [Note 1] | Reference period | Monitoring frequency | Monitoring standard or method [Note 2] |
| | Dioxin like PCBs (WHO-TEQ Fish) ^[Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) and BS EN TS 1948-4 |
| | Dioxin like PCBs (WHO-TEQ Birds) ^[Note 4] | | No limit set | Average over a period of between 6 hours and 8 hours | Bi-annually | To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) and BS EN TS 1948-4 |
| | Ammonia (NH ₃) | | No limit set | Daily and half hourly average | Continuous | BS EN 15267-3 |
| | Nitrous oxide (N ₂ O) | | No limit set | Daily and half hourly average | Continuous | BS EN 15267-3 |

Note 1: The limits do not apply during start-up and shut-down.

Note 2: MCERTS certification to the appropriate ranges and determinands is a demonstration of compliance to the applicable standards.

Note 3: Metals include gaseous, vapour and solid phases as well as their compounds (expressed as the metal or the sum of the metals as specified). Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V mean antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel and vanadium respectively.

Note 4: The TEQ sum of the equivalence factors to be reported as a range based on: All congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum.

| Table S3.1(b) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements | | | | | | |
|--|-------------------|------------------|-------------------------------|-------------------------|-----------------------------|--------------------------------------|
| Emission point ref. & location | Parameter | Source | Limit (including unit) | Reference period | Monitoring frequency | Monitoring standard or method |
| A4 [labelled as A4 on site plan in Schedule | No parameters set | Sludge combustor | No limits set | - | - | - |

| Table S3.1(b) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements | | | | | | |
|--|------------------|---------------|-------------------------------|-------------------------|-----------------------------|--------------------------------------|
| Emission point ref. & location | Parameter | Source | Limit (including unit) | Reference period | Monitoring frequency | Monitoring standard or method |
| 7] | | | | | | |

| Table S3.1(c) Point source emissions to air for installation excluding large combustion plant and sludge combustor – emission limits and monitoring requirements | | | | | | |
|---|-------------------|---------------------------------------|-------------------------------|-------------------------|-----------------------------|--------------------------------------|
| Emission point ref. & location | Parameter | Source | Limit (including unit) | Reference period | Monitoring frequency | Monitoring standard or method |
| A1 [labelled as A1 on site plan in schedule 7] | No parameters set | Standby Diesel Generator Exhaust | No limits set | - | - | - |
| | | Standby Diesel Sprinkler Pump Exhaust | No limits set | - | - | - |

| Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements | | | | | | | |
|--|---------------------------|--|----------------------------|--|-------------------------------------|--|---------------------|
| Emission point ref. & location | Parameter | Source | Limit (incl. unit) | Reference period | Monitoring frequency | Monitoring standard or method | |
| W1 [emission to River Great Ouse, labelled as W1 on site plan in schedule 7] | Flow rate | Effluent Treatment plant | 15,000 m ³ /day | 24 hours | Continuous | SCA Estimation of Flow and Load ISBN 011752364X [Note 1] | |
| | Temperature | | 36°C | Instantaneous | Continuous | Digital Thermometer | |
| | pH | | 6.5 – 9.0 | Instantaneous | Continuous | BS 6068-2.50:1995, ISO 10523:1994 [Note 1] | |
| | Biochemical oxygen demand | | 20 mg/l | 24 hour flow proportional composite sample | Weekly | | BS EN 1899-1 (1998) |
| | | | 30 mg/l | Spot sample | | | |
| | Chemical oxygen demand | | No limit | Spot sample | Daily | | BS 6068-2.34:1998 |
| Total Nitrogen | 10 mg/l | 24 hour flow proportional composite sample | Weekly | | BS EN 12260:2003, BS 6068-2:83:2003 | | |

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

| Emission point ref. & location | Parameter | Source | Limit (incl. unit) | Reference period | Monitoring frequency | Monitoring standard or method |
|---|---|---------------|---------------------------|--|-----------------------------|--|
| | Total Phosphorous | | 2 mg/l | 24 hour flow proportional composite sample | Weekly | BS EN ISO15681-1:2004, BS 6068-2.86:2003 or BS EN ISO15681-2:2004, BS 6068-2.87:2004 |
| | Adsorbable Organic Halides | | 0.5 mg/l | 24 hour flow proportional composite sample | Weekly | ISO 9562:1998 EN1485 – Determination of adsorbable organically bound halogens |
| | Suspended solids | | 50 mg/l | 24 hour flow proportional composite sample | Daily | BS EN 872:2005 or SCA blue book 105 ISBN 011751957X |
| | | | 75 mg/l | Spot sample | Daily | |
| | Total Organic Carbon | | No limit set | Instantaneous | Continuous | BS EN 1484:1997 or SCA blue book 157 ISBN 0117529796 |
| | Turbidity | | No limit set | Instantaneous | Continuous | BS EN ISO 7027:2000 or SCA blue book 103 ISBN 0117519553 |
| | Water Framework Directive Priority Hazardous Substances Screen | | No limit set | 24 hour flow proportional composite sample | Annually | GC/MS analysis to be carried out by UKAS accredited laboratory |
| | Total metals – Zinc, Arsenic, Copper, Chromium, Nickel and Lead | | No limit set | 24 hour flow proportional composite sample | Quarterly | BS EN ISO 15586:2003 |
| | Pentachlorophenol (PCP) and its compounds | | No limit set | 24 hour flow proportional composite sample | Quarterly | BS EN 12673:1999 |
| | Total cadmium and its compounds | | No limit set | 24 hour flow proportional composite sample | Quarterly | BS EN ISO 5961:1995 |

| Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements | | | | | | |
|--|---------------------------------|-------------------------------|---------------------------|--|-----------------------------|--|
| Emission point ref. & location | Parameter | Source | Limit (incl. unit) | Reference period | Monitoring frequency | Monitoring standard or method |
| | Total mercury and its compounds | | No limit set | 24 hour flow proportional composite sample | Quarterly | BS EN 1483:2007 |
| W2 [emission to River Great Ouse, labelled as W2 on site plan in schedule 7] | Uncontaminated Surface Water | Surface water drainage system | No limit set | - | - | Permanent sampling access not required |

Note 1: MCERTS self-monitoring of effluent flow scheme applies upon completion of IC 2. The current sampling method is acceptable in the interim

| Table S3.3 Process monitoring | | | |
|--|----------------------|-----------------------------|--------------------------------------|
| Emission point reference or source or description of point of measurement | Parameter | Monitoring frequency | Monitoring standard or method |
| Sludge combustor combustion chamber temperature | Temperature | Continuous | MCERTS performance standard for CEMS |
| A4 [labelled A4 on site plan in Schedule 7] | Oxygen concentration | Continuous | MCERTS performance standard for CEMS |
| | Pressure | | |
| | Temperature | | |
| | Water vapour content | | |

| Table S3.4 Residue quality | | | | | |
|--|---|--------------|--|--|-----------------------------|
| Emission point reference or source or description of point of measurement | Parameter | Limit | Monitoring frequency | Monitoring standard or method <small>Note 1</small> | Other specifications |
| Sludge combustor Bottom Ash | LOI | <5% | Monthly in the first year of operation. Then Quarterly | Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis' | |
| Sludge combustor Bottom Ash | Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and | | Monthly in the first year of operation. Then Quarterly | Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis' | |

| Table S3.4 Residue quality | | | | | |
|--|---|--------------|--|--|-----------------------------|
| Emission point reference or source or description of point of measurement | Parameter | Limit | Monitoring frequency | Monitoring standard or method ^{Note 1} | Other specifications |
| | dioxin-like PCBs. | | | | |
| Sludge combustor Bottom Ash | Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions | | Before use of a new disposal or recycling route | Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis' | |
| Sludge combustor APC Residues | Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs. | | Monthly in the first year of operation. Then Quarterly | Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis' | |
| Sludge combustor APC Residues | Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions | | Before use of a new disposal or recycling route | Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis' | |

Note 1: Or other equivalent standard as agreed in writing with the Environment Agency.

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 |
| Emissions to air Parameters as required by condition 3.5.1 | A3, A4, A5 | Every 3 months for continuous monitoring Every 6 months for periodic monitoring | 1 January, 1 April, 1 July, 1 October 1 January, 1 July |
| Emissions to water Parameters as required by condition 3.5.1 | W1 | Every 6 months | 1 January, 1 July |
| LOI Parameters as required by condition 3.5.1 | Bottom Ash | Quarterly (but monthly for the first year of operation) | 1 Jan, 1 Apr, 1 Jul and 1 Oct |
| Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1 | Sludge combustor Bottom Ash | Quarterly (but monthly for the first year of operation) | 1 Jan, 1 Apr, 1 Jul and 1 Oct |
| Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1 | Sludge combustor Bottom Ash | Before use of a new disposal or recycling route | Start of commissioning |
| Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1 | Sludge combustor APC Residues | Quarterly (but monthly for the first year of operation) | 1 Jan, 1 Apr, 1 Jul and 1 Oct |
| Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1 | Sludge combustor APC Residues | Before use of a new disposal or recycling route | Start of commissioning |

| Table S4.1 Reporting of monitoring data | | | |
|---|---|-------------------------|----------------------|
| Parameter | Emission or monitoring point/reference | Reporting period | Period begins |
| Functioning and monitoring of the incineration plant as required by condition 4.2.2 | | Annually | 1 Jan |

| Table S4.2 Annual production/treatment | |
|---|--------------|
| Parameter | Units |
| Power generated by LCP | GWHrs |

| Table S4.3 Performance parameters | | |
|--|--------------------------------|----------------------------|
| Parameter | Frequency of assessment | Units |
| Recovered energy per tonne newsprint | Annually | MWh/tonne Newsprint |
| Electricity generated by sludge combustor per tonne sludge combusted | Annually | MWh/tonne sludge combusted |
| Steam generated by sludge combustor per tonne sludge combusted | Annually | MWh/tonne sludge combusted |
| Primary carbon dioxide per tonne newsprint | Annually | Tonnes/tonne Newsprint |
| Sludge combusted | Annually | Tonnes/tonne Newsprint |
| Total Recycled Paper Used | Annually | Tonnes/tonne Newsprint |
| COD Release to Water | Annually | Kg/tonne Newsprint |
| BOD/ADT | Quarterly | Kg/ADT |
| NO _x /ADT | Quarterly | Kg/ADT |
| CO ₂ /ADT | Quarterly | Kg/ADT |
| Total suspended solids/ADT | Quarterly | Kg/ADT |
| Nutrient N/ADT | Quarterly | Kg/ADT |
| Nutrient P/ADT | Quarterly | Kg/ADT |
| Thermal Input Capacity for each LCP | Annually | MW |
| Package boiler hours of standby fuel use | Annually | Hours |
| Operating Hours for each LCP (Load Factor) | Annually | Hours |
| Annual Fuel Usage for each LCP | Annually | tJ |
| Total Emissions to Air of NO _x for each LCP | Annually | Tonnes |
| Total Emissions to Air of SO ₂ for each LCP | Annually | Tonnes |
| Total Emissions to Air of Dust for LCP 257 | Annually | Tonnes |

| Table S4.4 Reporting forms | | | |
|-----------------------------------|--|--------------------------|---------------------|
| Media/ parameter | Reporting format | Agency recipient | Date of form |
| Air & Energy | Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy | National | 31/12/15 |
| LCP | Form IED HR1 – operating hours | National and Area Office | 31/12/15 |
| Air – LCP | IED CON 2 – continuous monitoring | | 31/12/15 |
| CEMs | Form IED CEM – Invalidation Log | Area Office | 31/12/15 |

| Table S4.4 Reporting forms | | | |
|---|--|-----------------------------|-------------------------|
| Media/ parameter | Reporting format | Agency recipient | Date of form |
| Air | Form IED PM1 – discontinuous monitoring and load | Area Office | 31/12/15 |
| Air - LCP | Form Air 03 - SO ₂ , NO _x and dust concentration emissions and operating hours for > & <70% load. | Area Office | 31/12/15 |
| Air - LCP | Form Air – 6 continuous measurement systems opt out hours reporting log or other form as agreed in writing by the Agency | Area Office | 31/12/15 |
| Air - LCP | Form AAE1- Energy Usage summary and LCP Emissions to Air other form as agreed in writing by the Environment Agency | Area Office | 31/12/15 |
| Air – sludge combustor | Form Air – 9 continuously monitored emissions to air for particulates reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 10 continuously monitored emissions to Air for TOC reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 11 continuously monitored emissions to Air for Hydrogen Chloride reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 12 continuously monitored emissions to air for carbon monoxide reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 14 continuously monitored emissions to air for sulphur dioxide reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 15 continuously monitored emissions to air for oxides of nitrogen reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Air – sludge combustor | Form Air – 16 periodically monitored emissions to air reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Waste disposal and recovery – sludge combustor | Form R1 Waste disposal and recovery reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Residues - sludge combustor | Form residue 1 residue quality reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Residues - sludge combustor | Form residue 2 ash solubility reporting form or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Water and other raw material use - sludge combustor | Form WU/RM1 water and other raw material usage reporting form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Water | Form water 1 or other form as agreed in writing by the Environment Agency | Area Office | 01/03/12 |
| Other performance indicators | Form performance 1 or other form as agreed in writing by the Environment Agency | Area Office | 31/12/15 |

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 | |
| 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 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

“abatement equipment” means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

“abnormal operation” of the sludge combustor means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices, during which the emissions into the air and the discharges of waste water may exceed the prescribed emission limit values

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

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

“APC residues” means air pollution control residues.

“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.

“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.

“bottom ash” means ash separated from the fluidising medium (sand) removed from the fluidised bed combustion unit.

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

“CEM” Continuous emission monitor

“CEN” means Comité Européen de Normalisation.

“daily average” for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

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

“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 to land” includes emissions to groundwater.

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

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“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.

“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.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“incineration line” means all of the incineration equipment related to a common discharge to air location.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“ISO” means International Standards Organisation.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshaft 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.

‘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

“LOI” means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

“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.

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

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenz[ah]anthracene, Dibenz[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“PCB” means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.

Pests” means Birds, Vermin and Insects.

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

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

“shut down” is any period where the plant is being returned to a non-operational state and there is no waste being burned.

“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.

“start up” of the sludge combustor is any period, where the plant has been non-operational, after igniting the auxiliary burner until waste has been fed to initiate steady-state conditions.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, 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.

“year” means calendar year ending 31 December.

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:

- (a) 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
- (b) 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
- (c) 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
- (d) 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
- (e) in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry

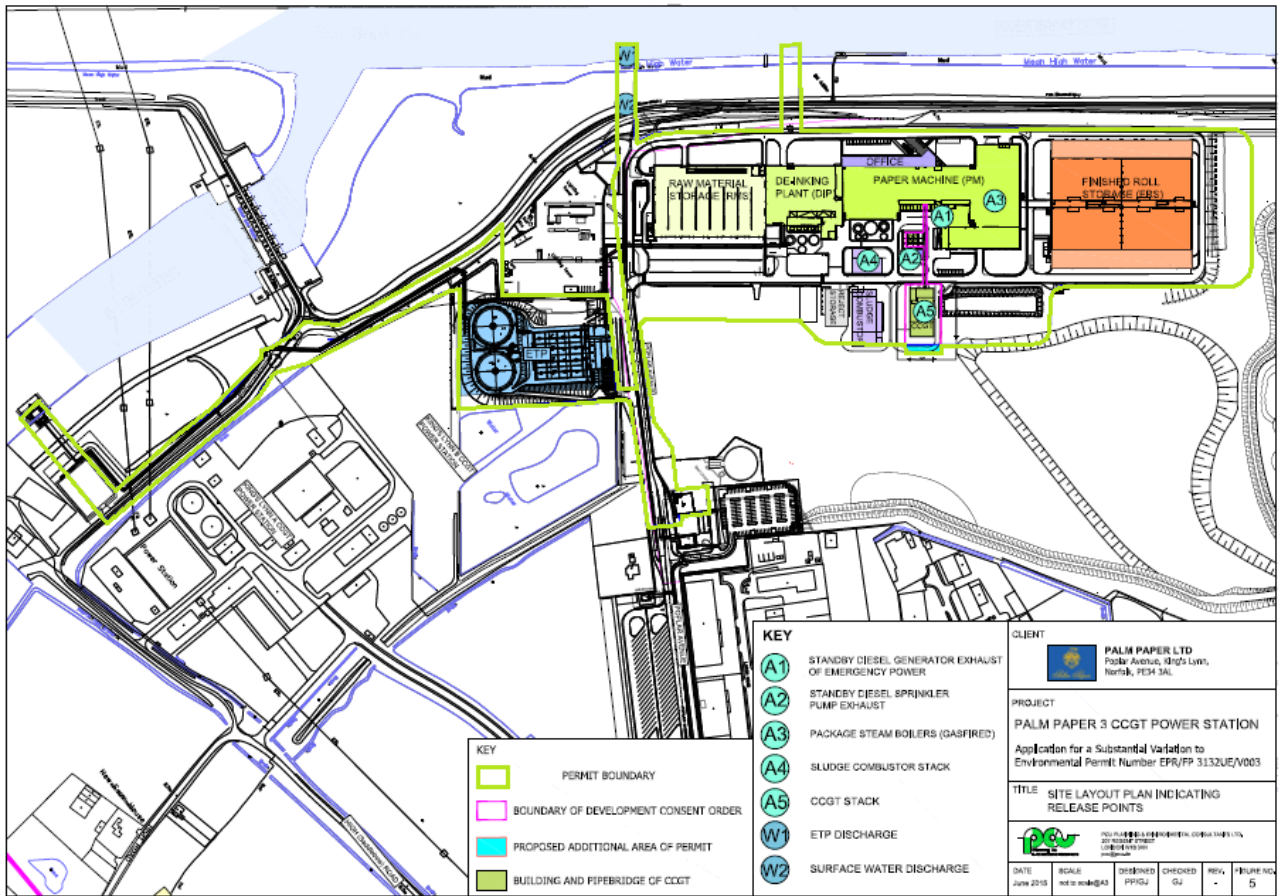
For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1(a).

| 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 |

| TEF schemes for dioxins and furans | | | | |
|------------------------------------|-------|---------|--------|--------|
| Congener | I-TEF | WHO-TEF | | |
| | 1990 | 2005 | 1997/8 | |
| 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 |
| 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



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END OF PERMIT