

## Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Covanta Energy Limited

Middlewich Energy from Waste Plant  
Plot 63  
Midpoint 18 Industrial Estate  
Pochin Way  
Middlewich  
Cheshire

Permit number

EPR/YP3738XZ

# Middlewich Energy from Waste Plant

## Permit Number EPR/YP3738XZ

### Introductory note

#### ***This introductory note does not form a part of the permit***

This permit controls the operation of part of an installation, whose purpose is the disposal of waste with energy recovery in an incineration plant. The relevant listed activity is Schedule 5.1 A(1) (c). The permit implements the requirement of the EU Directive(s), in particular, the Directives on Integrated Pollution Prevention and Control and Waste Incineration.

The main features of the facility are as follows:

The facility is a moving grate incinerator for the incineration of non-hazardous municipal, commercial and industrial waste.. Waste that has not been subject to segregation will be pre-treated to remove recyclable materials and any residual waste being incinerated

The facility has been designed to incinerate about 370,000 tonnes of waste annually at a rate of 50 tonnes per hour (2 lines with a capacity of 25 tonnes per hour each) and produce 44 MW of electricity with 37 MW of that electricity being exported to the National Grid.

The emissions to air from the site will be minimised by:

- (i) Lime injection into post- boiler gas stream to reduce emissions of acid gases such as hydrogen chloride and sulphur dioxide,
- (ii) ammonia injection into secondary combustion chamber to reduce emissions of oxides of nitrogen; and
- (iii) activated carbon injection into post- boiler gas stream to reduce emissions of metals and dioxins.

There are no emissions to surface water or groundwater directly from the process.

The permit sets monitoring requirements and associated limits for emissions to air and water from the facility. Emissions from the stack will be continuously monitored for: particulate matter, carbon monoxide (CO), ammonia (NH<sub>3</sub>), sulphur dioxide (SO<sub>2</sub>), hydrogen chloride (HCl), oxygen (O<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC). In addition periodic sampling and measurement will be carried out for metals [cadmium (Cd), thallium (Tl), mercury (Hg), antimony (Sb), arsenic (As), lead (Pb), chromium (Cr), cobalt (Co), copper (Cu), manganese (Mn), nickel (Ni), vanadium (V)], hydrogen fluoride (HF), dioxins and furans and dioxin- like PCBs.

A separate EPR permit issued to Ballast Phoenix covers the treatment of incinerator bottom ash at a neighbouring facility within the Installation boundary. The facility covered by this permit and the ash facility comprise a single installation.

The facility is located 8 km from the nearest Ramsar site and 2km from the nearest Site of Special Scientific Interest (SSSI).

There are no Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within the relevant distance from the site.

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

**Status Log of the permit**

<b>Detail</b>	<b>Date</b>	<b>Comments</b>
Application EPR/YP3738XZ/A001	Duly made 23 March 2010	
Additional Information Requested by Schedule 5 notice	29 September 2010	Information requested and received in respect of protected species, waste list, BAT assessment, operator competence, human health risk assessment and odour control.
Additional Information Received in response to notice	19 November 2010	
Additional Information Requested by Schedule 5 notice	17 January 2011	Information requested to justify inputs and methodology for noise impact assessment.
Additional Information Received in response to notice	03 February 2011	
Further additional information received	14 October 2010	Noise modelling data
	20 October 2010	Surface water emission abatement and discharge
	18 November 2010	Definition of start-up and shutdown
	19 November 2010	Details of noise modelling input data.
	12 January 2011	Additional input on noise modelling
	02 February 2011	Additional information on air dispersion modelling
	07 February 2011	Details on additional waste code for acceptance
Further additional information received	22 February 2011	Additional information on continuous air emission monitors back-up.
	12 April 2011	Additional information on back-up CEMs for CO, TOC and particulates
Permit determined	11/06/2012	

**Other Part A installation permits relating to this installation**

<b>Operator</b>	<b>Permit Number</b>	<b>Date of Issue</b>
Ballast Phoenix	EPR/PP3333FV	11/06/2012

End of Introductory Note

# Permit

The Environmental Permitting (England and Wales) Regulations 2010

## Permit

Permit number

**EPR/YP3738XZ**

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

**Covanta Energy Limited** ("the operator"),

whose registered office is

**West Point**

**Mucklow Office Park**

**Mucklow Hill**

**Halesowen**

**West Midlands**

**B62 8DY**

company registration number **5845046**

to operate part of an installation at

**Covanta Energy Limited**

**Middlewich Energy from Waste Plant**

**Plot 63,**

**Midpoint 18 Industrial Park**

**Pochin Way**

**Middlewich**

**Cheshire**

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

		Date
		11 June 2012

Anne Nightingale

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) review and record at least every four years whether there are suitable opportunities to improve the energy recovery and efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.2.2 The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

1.2.3 The operator shall review the practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to the Agency within 2 months of each 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 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; and
  - (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 waste disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 review and record at least every four years whether changes to those measures should be made; and
- 1.4.3 take any further appropriate measures identified by a review.

## **1.5 Multiple operator installations**

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

# **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 in condition 2.3.3 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, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and that/those of (the) other operator(s) of the installation.

## **2.3 Operating techniques**

- 2.3.1 (a) 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.

- (b) 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 specified in schedule 1, table S1.2 or otherwise required under this permit, 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.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 Waste shall only be accepted if:
  - (a) it is of a type and quantity listed in schedule 2 table S2.2; and
  - (b) it conforms to the description in the documentation supplied by the producer and holder; and
  - (c) having been separately collected for recycling, it is contaminated and otherwise destined for landfill.
- 2.3.4 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.
- 2.3.5 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.
- 2.3.6 Waste shall not be charged, or shall cease to be charged, 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(a) is exceeded; or
  - (c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than under WID abnormal operating conditions ; or
  - (d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under WID abnormal operating conditions.
- 2.3.7 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.6, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.6 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.
- 2.3.8 The operator shall record the beginning and end of each period of "WID abnormal operation".
- 2.3.9 During a period of "WID abnormal operation", the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

- 2.3.10 Where, during “WID abnormal operation”, any of the following situations arise, the operator shall, as soon as is practicable, cease the burning of waste until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 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 “WID abnormal operation” periods over 1 calendar year exceeds 60 hours on an incineration line;
  - (c) 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;
  - (d) the alternative techniques to demonstrate compliance with the “WID abnormal operation” emission limit value(s) for particulates, TOC and / or CO in schedule 3 table S3.1 (a), as detailed in the application or as agreed in writing with the Environment Agency, are unavailable.
- 2.3.11 The operator shall interpret the end of the period of “WID abnormal operation” 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 shut down 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 “WID abnormal operation”;
  - (d) when, in any calendar year, an aggregated period of 60 hours “WID abnormal operation” has been reached for a given incineration line.
- 2.3.12 Bottom ash and APC residues 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 activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 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 and S3.2 except in “WID abnormal operation”, when 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(a) and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S 3.4. Additional samples shall be taken and tested and appropriate action taken, whenever:
- (a) disposal or recovery routes change; or
  - (b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.

### **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;
  - (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;

- (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;
  - (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) and S3.2.
  - (b) process monitoring specified in table S3.3;
  - (c) residue quality 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 continual), 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) unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.
- 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.unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 Where Continuous Emissions Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1 and 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<sub>2</sub> expressed as NO<sub>2</sub>) 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 period. 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.

## 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; and
  - (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 Article 12(2) of the Waste Incineration Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the WID.
- 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.

## 4.3 Notifications

- 4.3.1 The Environment Agency shall be notified without delay following the detection of:
- (a) 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;
  - (b) the breach of a limit specified in the permit; or
  - (c) any significant adverse environmental effects.

- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- (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.
- 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.

## **4.4 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 "without delay", in which case it may be provided by telephone.

# Schedule 1 - Operations

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
Section 5.1 Part A1(c)	The incineration of non-hazardous waste in an incineration plant with a capacity of 1 tonne per hour or more.	The incineration of non-hazardous waste including the operation of two incineration lines with boilers and auxiliary burners; facilities for the treatment of exhaust gases; on-site facilities for treatment, storage and disposal of residues, surface water and waste water; systems for controlling and monitoring incineration operations; and receipt, storage and handling (including shredding) of wastes and raw materials (including fuels) .  Waste types and quantities as specified in Table S2.2 of this permit.
<b>Directly Associated Activity</b>		
Electricity generation.	The generation of electricity using a steam turbine.	Generation of electricity for use on-site and export.
Steam supply	Export of up to 30Te/hr of low pressure steam and receipt of returned condensate	Provision for steam/hot water to be utilised by other energy users local to the site.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Section 3.2 excluding 3.2.3, 3.2.4, 3.2.10, 3.2.26, 3.2.27, 3.2.28 and 3.2.31. Section 3.9 Section 3.10 Section 3.11	19 February 2010
Additional information	e-mail regarding surface water discharges e-mail on start-up and shutdown definitions	20 October 2010 18 November 2010
Response to Schedule 5 Notice dated 29 September 2010	Section 7.4	19 November 2010

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IC1	<p>The operator shall submit a post-commissioning report to the Agency which shall include as a minimum:</p> <ul style="list-style-type: none"> <li>- the end date for commissioning and the start of plant operations</li> <li>- a review of performance of the facility against the conditions of this permit.</li> <li>- details of optimization of emission abatement systems including reagent dosing rates.</li> <li>- Assessment of noise impact of the site in line with the proposal agreed as a result of pre-operational condition PO4 within Table S1.4 of this Permit and proposed improvements to reduce noise levels to that assessed within the application, where necessary.</li> <li>- Details of procedures developed during commissioning for achieving and demonstrating satisfactory process control.</li> </ul> <p>The report should clearly demonstrate how the commissioning plan agreed in response to PO1 has been implemented during the commissioning period.</p> <p>Where differences are identified between the plant performance and that presented within the EPR permit application the Operator shall</p> <ul style="list-style-type: none"> <li>(i) review the Environmental Impact assessment submitted as part of the application where appropriate, and</li> <li>(ii) propose a time-tabled plan for upgrades to optimise plant performance.</li> </ul> <p>Any submitted plan shall be implemented in line with written agreement from the Agency.</p>	Within 3 months of end of commissioning period.
IC2	<p>The operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A1, identifying the fractions within the PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1.0</sub> ranges. The proposal shall include a timetable for approval by the Environment Agency to carry out such tests and produce a report on the results.</p> <p>On receipt of written agreement by the Environment Agency to the proposal and the timetable, the operator shall carry out the tests and submit to the Environment Agency a report on the results.</p>	Within 6 months of the completion of commissioning.
IC3	<p>The operator shall review the potential for alternative re-use, recycle or disposal routes for the bottom ash and APC residue generated at the site in accordance with the waste hierarchy referred to in Article 4 of the WFD. The review should consider how the environmental impact can be minimised. Where feasible alternatives are identified then the Operator shall propose a timetabled plan to implement the identified alternatives. A written report shall be submitted to the Agency.</p> <p>The improvements identified shall be put in place as agreed in writing by the Agency.</p>	Within 9 months of start of operations at the site

**Table S1.3 Improvement programme requirements**

<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC4	The Operator shall carry out an assessment of the impact of emissions to air of all the component metals subject to emission limit values, i.e. Cd, Tl, Hg, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those used in the original impact assessment. An assessment shall be made of the impact of each metal against the relevant EQS/EAL through the use of air dispersion modelling. A report on the assessment shall be made to the Environment Agency.	Within 15 months of start of operations at the site.
IC5	The Operator shall submit a written report to the Environment Agency on the implementation of its Environmental Management System and the progress made in the accreditation of the system by an external body or if appropriate submit a schedule by which the EMS will be subject to accreditation.	Within 12 months of start of operations at the site.
IC6	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the furnace whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to the Environment Agency.	Within 4 months of the completion of commissioning
IC7	The Operator shall submit a written summary report to the Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning.  Full summary evidence compliance report to be submitted within 18 months of commissioning.

**Table S1.4 Pre-operational measures**

Reference	Pre-operational measures
PO1	Prior to the commencement of commissioning; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved
PO2	At least 4 months prior to start of operation at the site, the operator shall submit a written report to the Agency of the details of the computational fluid dynamic (CFD) modelling. The report shall demonstrate whether the design combustion conditions comply with the residence time and temperature requirements as defined by the Waste Incineration Directive. The report shall also justify the position of all temperature probes that are to be used to demonstrate compliance with the WID, as well as demonstrating the reliability and accuracy of the temperature probes. The report shall also contain a proposed procedure to demonstrate that WID conditions are complied with in line with Article 11(3) of that Directive. Operations at the site shall not start until the report is approved in writing by the Agency.
PO3	At least 3 months prior to start of operations at the site, the operator shall submit a written plan to the Agency for approval detailing the ash sampling protocol to be used for APC residues and bottom ash, in conformance to Agency Guidance. The plan shall be implemented in accordance with the Agency's written approval
PO4	At least 2 months prior to start of operations at the site, the operator shall provide the Agency with a written report for approval describing the detailed programme of noise monitoring that will be carried out at the site and in the surrounding environment during the commissioning stage and when the plant is fully operational. The report shall include confirmation of locations, time, frequency and methods of noise monitoring. The monitoring programme shall be carried out in accordance with the Agency's written approval.
PO5	At least 2 months prior to start of operations at the site, the Operator shall submit a report to the Agency detailing an investigation into identifying potential users of steam/hot water within sufficient proximity of the site for the use of that steam to be potentially viable. Where such users are identified the Operator shall assess the feasibility of supplying the potential user with steam/hot water by operating the combustion unit at the site as a Combined Heat and Power plant. Where applicable, the report shall include a time-tabled plan to implement such changes including the development of the operating techniques and training of relevant personnel. The report shall also include a commitment for regular structured investigations of potential steam users in the vicinity of the site in line with condition 1.3.3 of this Permit.
PO6	At least 1 month prior to start of commissioning, the Operator shall send a summary of the site Environment Management System (EMS) to the Environment Agency and make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Section 1 of 'How to comply with your environmental permit – Getting the basics right'; and Horizontal Guidance Note H6 'Environmental Management Systems' The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.

## Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Gas oil	Less than 0.1% w/w sulphur

Table S2.2 Permitted waste types and quantities	
Maximum quantity	The maximum quantity of waste to be treated is 370,000 tonnes per year.
Waste code	Description
<b>02- - WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING</b>	
<i>02 01 - wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing</i>	
02 01 03	plant-tissue waste
<i>02 06 - wastes from the baking and confectionery industry</i>	
02 06 01	materials unsuitable for consumption or processing
<b>03 - WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD</b>	
<i>03 01 - wastes from wood processing and the production of panels and furniture</i>	
03 01 01	waste bark and wood
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those containing dangerous substances
<i>03 03 - wastes from pulp, paper and cardboard production and processing</i>	
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
<b>04 - WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRY</b>	
<i>04 02 - wastes from the textile industry</i>	
04 02 10	organic matter from natural products (for example grease, wax)
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres

<b>15 - WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED</b>	
<i>15 01 - packaging (including separately collected municipal packaging waste)</i>	
15 01 01	Paper and cardboard packaging
15 01 03	Wooden packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 09	Textile packaging
<i>15 02 - absorbents, filter materials, wiping clothes, and protective clothing</i>	
15 02 03	absorbents, filter materials, wiping clothes, and protective clothing other than those mentioned in 15 02 02
<b>17 - CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)</b>	
<i>17 02 - Construction and demolition wastes - wood, glass and plastic</i>	
17 02 01	Wood

<b>Waste code</b>	<b>Description</b>
<b>19 - WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE</b>	
<b>19 02 - wastes from physico/chemical treatments of waste (including decyanidation, neutralisation, but excluding dechromatation)</b>	
19 02 03	premixed wastes composed only of non-hazardous wastes
<b>19 05 - wastes from aerobic treatment of solid wastes</b>	
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
<b>19 06 - wastes from anaerobic treatment of waste</b>	
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
<b>19 10 – wastes from shredding of metal containing wastes</b>	
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	other fractions other than those mentioned in 19 10 05
<b>19 12 - wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified</b>	
19 12 01	paper and cardboard
19 12 04	plastic and rubber
19 12 07	wood other than that containing dangerous substances
19 12 08	textiles
19 12 10	combustible waste (refuse derived fuel) – waste resulting from grading of bottom ash from the Installation at
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those containing dangerous substances
<b>20 - MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL)</b>	
<b>20 01 - separately collected fractions</b>	
20 01 01	Paper and cardboard
20 01 08	biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 38	wood other than that containing dangerous substances
20 01 39	Plastics
<b>20 02 garden and park wastes (including cemetery waste)</b>	
20 02 01	biodegradable waste
<b>20 03 -other municipal wastes</b>	
20 03 01	mixed municipal waste
20 03 02	wastes from markets
20 03 03	street –cleaning residues
20 03 07	bulky waste

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) <sup>[1]</sup>	Reference period <sup>[14]</sup>	Monitoring frequency	Monitoring standard or method <sup>[3], [5]</sup>
A1 & A2 (Points A1 & A2 on site plan in Schedule 7)	Waste incinerator lines 1 and 2 via APC plant.	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	200 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			400 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Particulate matter (dust)	10 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			30 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Total Organic Carbon (TOC)	10 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			20 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Hydrogen chloride	10 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			60 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Sulphur dioxide	50 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			200 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Carbon monoxide	50 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14181
			100 mg/m <sup>3</sup>	½ -hourly mean	Continuous	BS EN 14181
		Ammonia	10 mg/m <sup>3</sup>	Daily mean	Continuous	BS EN 14791
		Nitrous oxide	Record	Mean over minimum 1 hour period	Quarterly in first year. Then Bi-annual	BS ISO 21258
		Hydrogen fluoride	2 mg/m <sup>3</sup>	Mean over minimum 1 hour period	Quarterly in first year. Then Bi-annual	ISO 15713
		Cadmium and thallium and their compounds (total)	0.05 mg/m <sup>3</sup>	Mean over period minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 14385
		Mercury and its compounds	0.05mg/m <sup>3</sup>	Mean over period minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 13211
		Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and their compounds (total)	0.5 mg/m <sup>3</sup>	Mean over period minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 14385
Dioxins / furans (I-TEQ)	0.1 ng/m <sup>3</sup>	Mean over period minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 1948 1-3		

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements (continued)**

Emission point ref. & location	Source	Parameter	Limit (including unit) <sup>[1]</sup>	Reference period <sup>[12]</sup>	Monitoring frequency	Monitoring standard or method <sup>[3], [5]</sup>
Pressure relief valves	All relief valves on Incineration line 1 and 2 and associated APC plant, boiler and steam turbine.	Combustion gases and high pressure steam.	None			Not applicable
Vents from tanks	All vents from storage tanks for APC plant raw materials and demineralisation plant raw materials.	Vapours of Ammonia, gas oil, Hydrogen chloride solution, sodium hydroxide solution	None			Not applicable

**Table S3.1(a) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements**

Emission point ref. & location	Source	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in Schedule 2]	Waste incinerator line 1 via APC plant.	Particulate matter	150 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181
		Total Organic Carbon (TOC)	20 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181
		Carbon monoxide (CO)	100 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181
A2 [Point A2 on site plan in Schedule 2]	Waste incinerator line 2 via APC plant.	Particulate matter	150 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181
		Total Organic Carbon (TOC)	20 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181
		Carbon monoxide (CO)	100 mg/m <sup>3</sup>	½-hourly mean	Continuous	BS EN 14181

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

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1	Surface water from non-process areas on site	No parameter set	No limit set			

**Table S3.3 Process monitoring requirements**

Monitoring position	Parameter	Monitoring frequency	Monitoring standard or method [
As agreed in writing with the Agency	Furnace chamber temperature (incineration line 1)	Continuous	As agreed in writing with the Agency
	Furnace chamber temperature (incineration line 2)	Continuous	As agreed in writing with the Agency
As agreed in writing with the Agency	Date and start / stop times for waste feed (incineration line 1)	Continuous	As agreed in writing with the Agency
As agreed in writing with the Agency	Date and start / stop times for waste feed times (incineration line 2)	Continuous	As agreed in writing with the Agency
A1 and A2	Exhaust gas temperature	Continuous	As agreed in writing with the Agency
	Exhaust gas pressure	Continuous	As agreed in writing with the Agency
	Exhaust gas water content	Continuous	BS EN 15267-3
	Exhaust gas oxygen concentration	Continuous	BS EN 15267-3
	Exhaust gas flow rate	Continuous	BS EN 15267-3
	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	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 Fish)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	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)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3) and BS EN TS 1948-4
	Specific individual polycyclic aromatic hydrocarbons (PAHs), as defined in Schedule 6	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	BS ISO 11338-1 and BS-ISO 11338-2
	Dioxins / furans (WHO-TEQ Humans / Mammals)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3)
	Dioxins / furans (WHO-TEQ Fish)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3)
	Dioxins / furans (WHO-TEQ Birds)	Bi-annual. Mean value over minimum 6 hour, maximum 8 hour reference period	To be determined utilising sampling and analytical techniques developed for dioxins/ furans (BS EN 1948 1-3)

**Table S3.4 Residue quality**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Limit</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Bottom Ash from incineration line 1 and 2	Total Organic Carbon (TOC)	<3%	Monthly for the first year of operation and quarterly thereafter		Ash sampling protocol to be agreed in writing by the Agency based on the response to PO3
	Total heavy metal content (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds	Record	Monthly for the first year of operation and quarterly thereafter		
	Total dioxin/furan content	Record	Monthly for the first year of operation and quarterly thereafter		
	Total dioxin-like PCBs content	Record	Monthly for the first year of operation and quarterly thereafter		
	Total soluble fraction and heavy metal (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) content of that fraction	Record	Before use of a new disposal or recycling route	Analysis for total soluble fraction using EA NEN 7371:2004 and PR/CEN/TS 14429.	
APC residues from incineration line 1 and 2	Total heavy metal content (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds	Record	Monthly for the first year of operation and quarterly thereafter		Ash sampling protocol to be agreed in writing by the Agency based on the response to PO3
	Total dioxin/furan content	Record	Monthly for the first year of operation and quarterly thereafter		
	Total dioxin-like PCBs content	Record	Monthly for the first year of operation and quarterly thereafter		

**Table S3.4 Residue quality**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Limit</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
	Total soluble fraction and heavy metal (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) content of that fraction	Record	Before use of a new disposal or recycling route	Analysis for total soluble fraction using EA NEN 7371:2004 and PR/CEN/TS 14429.	

## 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.	A1, A2	Quarterly for the first year of operation and 6-monthly thereafter	From the first day that waste is burned in the installation
Total Organic Carbon content of bottom ash as required by condition 3.5.1	Bottom ash	Monthly for the first year of operation and 6-monthly thereafter	From the first day that waste is burned in the installation
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	Bottom Ash	Monthly for the first year of operation and 6-monthly thereafter	From the first day that waste is burned in the installation
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	Bottom Ash	Every 3 months but monthly for the first year of operation	From the first day that waste is burned in the installation
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	APC Residues	Every 3 months but monthly for the first year of operation	From the first day that waste is burned in the installation
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	APC Residues	Before use of a new disposal or recycling route	From the first day that waste is burned in the installation
Functioning and monitoring of the incineration plant as required by condition 4.2.2		Every 12 months	1 Jan

**Table S4.2: Annual production/treatment**

Parameter	Units
Total Municipal Waste Incinerated	tonnes
Total Commercial and Industrial Waste Incinerated	tonnes
Total electrical energy generated on site	KW/hr
Electrical energy exported	KW/hr
Electrical energy used on site	KW/hr
Steam/hot water exported from site	KW/hr

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
Fuel oil consumption	Quarterly	kgs / tonne of waste incinerated
Mass of Bottom Ash produced (including Boiler Ash)	Quarterly	kg / tonne of waste incinerated
Mass of APC residues produced (including Fly Ash)	Quarterly	kg / tonne of waste incinerated
Ammonia consumption	Quarterly	kg / tonne of waste incinerated
Activated Carbon consumption	Quarterly	kg / tonne of waste incinerated
Lime consumption	Quarterly	kg / tonne of waste incinerated
Water consumption	Quarterly	kg / tonne of waste incinerated
Periods of WID abnormal operation	Quarterly	No. of occasions and cumulative hours for current calendar year for each line

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form (air 1-7) or other form as agreed in writing by the Environment Agency	23/05/12
Water and raw material usage	Form WU/RM1 or other form as agreed in writing by the Environment Agency	23/05/12
Waste disposal/recovery	Form R1 or other form as agreed in writing by the Environment Agency	23/05/12
Residue Quality and solubility	Form residues1/2 or other form as agreed in writing by the Environment Agency	23/05/12
Energy usage	Form E1 or other form as agreed in writing by the Environment Agency	23/05/12

# 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	<b>EPR/YP3738XZ</b>
Name of operator	<b>Covanta Energy Limited</b>
Location of Facility	<b>Middlewich Energy from Waste Plant</b>
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.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of **Covanta Energy Limited**

## 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.

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

*“annually”* means once every year.

*“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.

*“bi-annual”* means twice per year with at least five months between tests;

*“bottom ash”* means ash falling through the grate and transported by the grate;

*“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.

*“dioxin and furans”* means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

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

*“emissions to land”* includes emissions to groundwater;

*“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.

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

*“ISO”* means International Standards Organisation.

*“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.

“*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, Dibenzo[ah]anthracene, Dibenzo[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.*

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

“*quarterly*” for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

“*recovery*” means any of the operations provided for in Annex IIB to Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 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.

“*start up*” is any period, where the plant has been non-operational, after igniting the auxiliary burner until waste has been fed to the plant in sufficient quantity to cover the grate and 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. In respect of Bottom Ash, this means the total carbon content of all organic species present in the ash (excluding carbon in elemental form).

“*Waste Incineration Directive*” means Directive 2000/76/EC on the incineration of waste (O.J. L 332, 28.12.2000)

“*WID abnormal operation*” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices [other than continuous emission monitors for releases to air of particulates, TOC and/or CO], during which the concentrations in the discharges into air and the purified waste water of the regulated substances may exceed the normal emission limit values.

“*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.

“*WFD*” means Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council).

“*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 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.

TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
		Humans / Mammals	Fish	Birds
<b>Dioxins</b>				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
<b>Furans</b>				
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
<b>Non-ortho PCBs</b>			
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
<b>Mono-ortho PCBs</b>			
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

