

Permit with Introductory Note



The Pollution Prevention and Control Act 1999 Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No.675) (as amended)

**Ipswich Crematorium
Cemetery Lane
Ipswich
IP4 2TQ**

Permit Ref: EP09/07

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Chronicle

Detail	Date	Comments
First authorised	25 September 1992	5.1b/1/CFB
Variation Notice	1 March 1993	5.1b/1/V1
Variation Notice	23 August 1993	5.1b/1/V2
Variation Notice	23 February 1994	5.1b/1/V3
LAPPC Deemed Application	1 April 2004	Duly made
Temporary Permit	5 May 2004	5.1/RJD/1
Consultation Permit	25 October 2005	5.1/RJD/1/05
Permit	1 November 2005	5.1/RJD/1/05
Variation Notice	August 2008	5.1/AJO/1/08
Draft Permit	April 2010	CR1/VPA/04/10
Permit	June 2010	CR1/VPA/04/10
Variation Notice	June 2010	WK/201001924
Variation Notice	January 2013	WK/201209073
Permit	January 2013	EP09/5
Variation Notice	April 2013	EP09/6
Draft Permit	May 2013	EP09/06
Variation notice and Permit issued	July 2013	EP09/07

Permit issued by:

Environmental Protection Services
Ipswich Borough Council
Grafton House
15-17 Russell Road
Ipswich
IP1 2DE

Telephone: 01473 433115
Fax: 01473 433062
Website: www.ipswich.gov.uk
Email: environmentalprotection@ipswich.gov.uk

INTRODUCTORY NOTE

This introductory note does not form part of the permit

The following Permit is issued under Regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010 SI 2010 No.675 (as amended), hereinafter referred to as the EP Regulations, to operate a scheduled installation carrying out an activity, or activities covered by the description in section 5.1 in Part 2 to Schedule 1 of the EP Regulations, to the extent authorised by the Permit.

Conditions within this Permit detail Best Available Techniques (BAT), for the management and operation of the installation, to prevent, or where that is not practicable, to reduce emissions.

The definition of BAT is 'the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole'.

In determining BAT, the Operator should pay particular attention to relevant sections of the Secretary of State's Guidance for Crematoria – Process Guidance Note 5/2(12), and any other relevant guidance. Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Note that the Permit requires the submission of certain information to Ipswich Borough Council, hereinafter referred to as the Regulator, and in addition, the Regulator has the power to seek further information at any time under Regulation 60 of the EP Regulations provided that the request is reasonable.

Public Registers

Information relating to Permits, including the application, is available on public registers in accordance with the EP Regulations. Certain information may be withheld from the public registers where it is commercially confidential, or if it is in the interest of national security to do so.

Variations to the Permit

The Regulator may vary the permit in the future, by serving a variation notice on the Operator. Should the Operator want any of the conditions of the Permit to be changed, a formal application must be submitted to the Regulator (the relevant forms are available from the Regulator). The Status Log that forms part of this introductory note will include summary details of this Permit, variations issued up to that point in time and state whether a consolidated version of the Permit has been issued.

Transfer of the Permit or Part of the Permit

Before the Permit can be wholly or partially transferred to another Operator, an application to transfer the Permit has to be made jointly by the existing and proposed Operators. A transfer will not be approved if the Regulator is not satisfied that the proposed Permit holder will be the person having control over the operation of the installation, or will not comply with the conditions of the transferred Permit. In addition, if the Permit authorises the Operator to carry out a specified waste management activity, the transfer will not be approved if the Regulator does not consider the proposed Permit holder to be a 'fit and proper person' as required by the EP Regulations.

Surrender of the Permit

Where an Operator intends to cease the operation of an installation (in whole or in part) the Regulator should be informed in writing. Such notification must include the information specified in Regulation 24(3) of the EP Regulations.

Responsibility under Workplace Health and Safety Legislation

The permit is given in relation to the requirements of the EP Regulations. It must not be taken to replace any responsibilities an Operator may have under the workplace health and safety legislation.

Appeal Against Permit Conditions

Any person who is aggrieved by the conditions attached to a Permit can appeal to the Secretary of State for Environment, Food & Rural Affairs. Appeals must be received by the Secretary of State no later than 6 months from the date of the decision (the date of the Permit).

Appeals relating to installations in England should be received by the Secretary of State for Environment, Food & Rural Affairs. The address is as follows:

**The Planning Inspectorate
Environmental Appeals Administration
Room 4/19 – Eagle Wing
Temple Quay House
2 The Square
Temple Quay
Bristol, BS1 PN**

The appeal must be in the form of a written notice or letter stating that the person wishes to appeal and listing the condition(s) which is/are being appealed against. The following five items must be included:

- (a) A statement of the grounds of appeal;
- (b) A copy of any relevant application;
- (c) A copy of any relevant Permit;
- (d) A copy of any relevant correspondence between the person making the appeal and the Council;
- (e) A statement indicating whether the appellant wishes the appeal to be dealt with.
 - by a hearing attended by both parties and conducted by an inspector appointed by the Secretary of State; or
 - by both parties sending the Secretary of State written statements of their case (and having the opportunity to comment upon one another's statements).

At the same time, the notice of appeal and documents (a) and (e) must be sent to the Council, and the person making the appeal should inform the appropriate Secretary of State that this had been done.

- An appeal will not suspend the effect of the conditions appealed against; the conditions must still be complied with.

- In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority to either vary any of these conditions or to add new conditions.

Copyright of any maps if provided with this Permit

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Talking to us

Please quote the Permit Number if you contact the Regulator about this Permit. To give a notification the Operator should telephone 01473 433012 or any other number notified in writing by the Regulator for that purpose.

~ End of Introductory Note~

Permit

**The Pollution Prevention and Control Act 1999
Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No.675)
(as amended)**

Permit Ref No: EP09/07

Ipswich Borough Council, hereinafter referred to as the Regulator, in exercise of its powers under Regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No.675) (as amended), hereby authorises:

Ipswich Crematorium (hereinafter referred to as the Operator)

whose registered office is:

**Ipswich Crematorium
Cemetery Lane
Ipswich
IP4 2TQ**

to operate an installation at:

**Ipswich Crematorium
Cemetery Lane
Ipswich
IP4 2TQ**

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

Signature:

Sara Boyles
Principal Environmental Health Officer
The Authorised Officer for this purpose

Date:

Permit issued by:

Environmental Protection Services
Ipswich Borough Council
Grafton House
15-17 Russell Road
Ipswich
IP1 2DE

Telephone: 01473 433053 or 01473 433112
Fax: 01473 433062
Website: www.ipswich.gov.uk
Email: environmentalprotection@ipswich.gov.uk

PROCESS DESCRIPTION

The cremation of human remains is carried out at Ipswich Crematorium, Cemetery Lane, Ipswich, IP4 2TZ. There are two XXL cremators located within the crematorium as shown on the attached site plan 1. The cremator comprises of a primary cremation chamber into which the coffin is inserted and within which the incineration takes place. The waste gas produced from this incineration process exits the cremation chamber by descending below the solid hearth into the secondary chamber (or the post-combustion chamber). The gases entering this zone are heated by a burner, if necessary, keeping the temperature at 850° C for at least 2 seconds of minimum residential time into the secondary chamber. This ensures compliance with the environmental requirements.

The flue gases are then cooled down using a heat exchanger and a cooling tower. At the exit of the heat exchanger, the flue gases will be below 200°C and can go through the mercury abatement plant. The abatement plant ensures that particulate matter, hydrogen chloride, nitrogen oxides, carbon monoxide and mercury compounds are chemically treated by injecting a reactive agent and captured and by the silicate filters inserted inside the plant.

The attached site plan 1, shows the layout of the crematorium.

The attached site location plan 2, shows the location of the site and its boundary.

CONDITIONS

Emission limits, monitoring and other provisions

1. Activities shall comply with the emissions limits and provisions with regard to releases in tables 1 and 2 and be expressed at reference conditions 273K, 101.3 kPa, 11% oxygen v/v dry gas.

Table 1: Emission concentration limits

Row	Substance	Concentration limits	Monitoring frequency
1	Mercury	50 mg/m ³ averaged over an hour of any cremation	Annual
2	Hydrogen chloride (excluding particulate matter)	30mg/m ³ averaged over an hour	Annual
3	Total particulate matter from cremator	20mg/m ³ averaged over an hour	Continuous indicative with alarms. Annual instrument check
4	Carbon monoxide	100 mg/m ³ reported as 2 x 30-minute averages.	Continuous indicative (15 sec intervals) with alarms. Annual
5	Organic compounds (excluding particulate matter) expressed as carbon	20mg/m ³ averaged over an hour of cremation	Annual

Table 2: Combustion provisions

Row	Substance	Combustion provisions	Type of monitoring	Monitoring frequency
6	Temperature	Minimum of 800°C (1073K) in secondary combustion chamber. Minimum of 850°C (1123K) in secondary combustion chamber when operating under emergency conditions without abatement.	Measure at the exit of the secondary combustion zone. The measuring point should be at the last measuring thermocouple. Automatically record temperatures. Visual alarm when temperature falls below 800°C. Automatically record alarm activations. Interlock to prevent cremator loading below 800°C.	Continuous

7	Oxygen	At the end of the secondary combustion chamber, measured wet or dry, minimum average 6% and minimum 3%.	<p>Monitor and record concentration at outlet of secondary combustion zone.</p> <p>Visual alarm and record alarm activations.</p> <p>During discontinuous tests, continuous reference oxygen measurements shall be at the same sampling location as the parameters tested.</p>	Continuous
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2. The introduction of dilution air to achieve emission concentration limits is not permitted.
3. The Operator shall keep records of inspections, tests and monitoring, including all non-continuous monitoring inspections and visual assessments. The records shall be:
 - (i) kept on site
 - (ii) kept by the Operator for at least two years, and
 - (iii) made available for an authorised officer of Ipswich Borough Council to inspect.
4. Adverse results from any monitoring activity (both continuous and non-continuous) shall be investigated by the Operator as soon as the monitoring data has been obtained. The Operator shall:
 - (i) identify the cause and take corrective action
 - (ii) record as much detail as possible regarding the cause and extent of the problem, and the action taken by the Operator to rectify the situation.
 - (iii) retest to demonstrate compliance as soon as possible; and
 - (iv) notify the Regulator.
5. Emissions from cremations shall be free from visible smoke and in any case shall not exceed the equivalent of Ringelmann Shade 1 as described in British Standard BS2742:1969.
6. All releases to air, other than condensed water vapour, shall be free from persistent visible emissions.
7. All emissions to air shall be free from droplets.
8. There shall be no offensive odour beyond the process boundary, as perceived by an authorised officer of Ipswich Borough Council.
9. Visual and olfactory assessments of emissions shall be made frequently and at least once each day whilst the process is in operation. The time, data, location and result of these assessments shall be recorded in the logbook.
10. The Operator shall keep simple records of quarterly gas consumption for inspection by the regulator. Consumption shall be converted into carbon dioxide equivalent (CO₂e) emissions using the following equation:

$$\text{Gas usage (kWh)} \times \text{conversion factor} = \text{kg CO}_2\text{e}$$

Up to date conversion factors shall be checked from the Defra website by the operator.

Continuous Monitoring

11. All continuous monitoring readings shall be on display to appropriately trained operating staff.
12. Instruments shall be fitted with audible and visual alarms, situated appropriately to warn the operator of arrestment plant failure or malfunction.
13. Trained operating staff shall record the activation of alarms either automatically or manually each time they occur.

14. All continuous monitors shall be operated, maintained and calibrated in accordance with the manufacturer's instructions, which shall be made available for inspection by an authorised officer of Ipswich Borough Council. The relevant maintenance and calibration (or referencing) shall be recorded.
15. All new continuous monitoring equipment shall be designed for less than 5% downtime of the operating time.
16. The Operator shall submit a report containing the following continuous monitoring data for carbon monoxide every 6 months in periods of four weeks:
 - (i) Values that exceed the 95% limit for carbon monoxide in that period.
 - (ii) 60 minute mean emission values that exceed the 100% limit for carbon monoxide in that period.
 - (iii) A list of the highest 60-minute mean emission value for each period.
 - (iv) The 95th percentile value for each period.
17. For temperature and oxygen, the Operator shall report the following continuous monitoring values to Ipswich Borough Council every six months:
 - (i) Secondary chamber entrance temperature and four weekly maximum and minimum of 5 minute averages.
 - (ii) Secondary chamber exit temperature and four weekly maximum and minimum of 5 minute averages.
 - (iii) Oxygen concentration four weekly minimum of 5 minute averages.
18. Where any values have been exceeded in any four weekly or six monthly reporting periods, records shall be kept that identify the number of times that the limit was exceeded during the reporting period, the levels of the exceedance and the time, date and cremation reference.

Non Continuous Monitoring

19. The Operator shall ensure that adequate facilities for sampling are provided on stacks or ducts.
20. The Operator shall notify the Regulator at least seven days before any non-continuous emission testing to determine compliance with emission limit values. The Operator shall state the provisional time and date of monitoring, pollutants to be tested and methods to be used.
21. The results of non-continuous emission testing shall be forwarded to the Regulator within eight weeks of the completion of the sampling.

Control Techniques

22. PVC and melamine shall not be used in coffin construction or furnishings.
23. Cardboard coffins shall not contain chlorine in the wet-strength agent.
24. Packaging for stillbirth, neonatal and foetal remains shall not include any chlorinated plastics.
25. Coffins containing lead or zinc shall not be cremated.

26. The cremator shall be designed and operated in order to prevent the discharge of smoke, fumes, or other substances during charging.
27. The charging system shall be interlocked to prevent the introduction of a coffin to the primary combustion zone unless the secondary combustion zone temperature exceeds the specified good combustion temperature stated in the permit.
28. Cremators shall be designed to ensure complete combustion and shall be fitted with a secondary combustion zone.
29. When rebricking a cremator, the convolutions of the secondary combustion chamber shall be maintained and the volume of the chamber recalculated and restated. The Regulator shall be made aware of the volume of the combustion chamber before and after rebricking.
30. The removal of ash and non-combustible residues from the cremator shall be undertaken carefully and shall be stored in a tightly lidded container.

Stacks

31. Flues and ductwork shall be cleaned to prevent accumulation of materials, as part of the routine maintenance programme.
32. Stacks or vents shall not be fitted with any restriction at the final opening such as a plate, cap or cowl, with the exception of a cone which may be necessary to increase the velocity of the emissions.
33. The cremators and all ductwork shall be made and maintained gastight if under positive pressure to prevent the escape of gases from the ductwork or cremator to air.
34. Emissions from the cremators shall discharge via the stack at a minimum height of 11.5m above the ground level with a minimum efflux velocity of 15ms^{-1} .

Management and training

35. The best available techniques shall be used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation which is not regulated by any other condition of this permit.
36. The Operator shall be aware that important elements for effective control of emissions shall include:
 - (i) proper management; supervision and training for process operations
 - (ii) proper use of equipment
 - (iii) effective preventative maintenance on all plant and equipment concerned with the control of emissions to the air; and
 - (iv) ensure that spares and consumables are available at short notice in order to rectify breakdowns rapidly. This is important with respect to arrestment plant and other necessary environmental control. It is useful to compile a list of essential items.
37. The Operator shall provide a list of key arrestment plant and shall have a written procedure for dealing with its failure, in order to minimise any adverse effects.

38. The Operator shall ensure staff at all levels receive the necessary training and instruction in their duties relating to control of the process and emissions to air.
39. The Operator shall ensure that training of all staff with responsibility for operating the process shall include:
 - (i) awareness of their responsibility under the permit
 - (ii) actions to minimise emissions during abnormal conditions
40. The Operator shall maintain a statement of training requirements for each operational part and keep a record of the training received by each person whose actions may have an impact on the environment. These documents shall be made available to an authorised officer of Ipswich Borough Council at their request.

Maintenance

41. The Operator shall employ an effective preventative maintenance on all aspects of the process including all plant, buildings and the equipment concerned with control of emissions to air. In particular:
 - (i) a written maintenance programme shall be provided to the regulator with respect to pollution control equipment (including control instrumentation, secondary chamber, ducts and flues and abatement plant)
 - (ii) a record of such maintenance shall be made available for inspection; and
 - (iii) cleaning schedules shall be available on site.

Notifications

42. In the case of malfunction, plant breakdown or accidents leading to abnormal emissions the Operator shall:
 - (i) Investigate and undertake remedial action immediately,
 - (ii) Adjust the process or activity to minimise those emissions; and
 - (iii) Promptly record the events and actions taken.
43. The Regulator shall be informed without delay in the event that
 - (i) malfunctions, plant breakdowns or accidents leading to abnormal emissions cause or are likely to cause an effect on the local community or significant pollution;
 - (ii) In the event of the failure of key arrestment plant; or
 - (iii) In the event of the use of the bypass or emergency relief vent system.
44. The Operator shall give written notification to the Regulator as soon as practicable prior to any of the following:
 - (i) permanent cessation of the operation of part or all of the Permitted Installation;
 - (ii) cessation of operation of part or all of the Permitted Installation for a period likely to exceed one year; and
 - (iii) resumption of the operation of part or all of the Permitted Installation after a cessation has been notified.
45. The Operator shall notify the following matters to the Regulator in writing within 14 days of their occurrence:

- (i) any change to the operation capable of altering the substances from the operation;
- (ii) any change in the Operator's trading name, registered name or registered office address;
- (iii) any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary);
- (iv) any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement, or being wound up.

In this condition, 'change in operation' shall mean a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.

46. The Operator shall send the Regulator, by no later than 1 April every year, a certificate from the Crematoria Abatement of Mercury Emissions Organisation (CAMEO organisation) or appropriate evidence from a comparable audited burden sharing arrangement or scheme which specifies:

- (i) the total number of cremations in the past 12 months;
- (ii) the number of cremations undertaken in cremators fitted with operational mercury abatement equipment in the previous 12 months; or
- (iii) the number of cremations undertaken in the previous 12 months and the proportion of those subject to burden sharing arrangements under which money is paid for the benefit of abated crematoria; or
- (iv) in cases where mercury abatement is fitted but fewer than 50% of cremations at the installation were undertaken in cremators fitted with it in the previous 12 months, the relevant information in both (ii) and (iii).

Emergency circumstances

47. Emergency relief vents or bypass systems shall only be used when

- (i) the heat removal plant has failed and the abatement plant would be damaged or
- (ii) During warm-up and shutdown provided that there is compliance with the carbon monoxide limit.

48. In the event of failure of the abatement system, cremations shall be allowed to continue for up to 48 hours to provide an opportunity for the necessary repairs to be completed.

49. Emergency relief vents or bypass systems shall not normally be used when cremation is under way. If the emergency relief vents or bypass systems are used during cremation more than once a year, the Operator shall investigate and take action immediately.

50. In the event of the emergency relief vents or bypass systems being used during cremation, the Operator shall:

- (i) notify Ipswich Borough Council immediately and
- (ii) Enter the failure, case and cure in the log book.

51. The Operator shall draw up a plan to deal with emergencies which give rise to mass fatalities by addressing the holding of additional spares and consumables and the training of suitable numbers of staff.

~End of Permit~