

All identified emissions are monitored annually or continuously as required by PG5/2 (12).

## **ANNUAL MONITORING OF EMISSIONS**

The concentration of pollutants, in emissions to air from the cremator, will be tested on an annual basis for particulate matter, hydrogen chloride, organic compounds, carbon monoxide and mercury, to demonstrate compliance with the emission limits as detailed in Table 4 of the Process Guidance Note PG5/2 (12).

Adequate facilities for sampling will be provided on vents or ducts which allow compliance with the British or equivalent standards.

The non-continuous emission monitoring exercise will encompass at least two individual cremations in each cremator.

The proposed test methods are as listed in the table below:

Pollutant	Test Method
Particulate matter	BS EN 13284 Part 1 for particulate below 50 mg/m <sup>3</sup> BS ISO 9096:2003 for particulate above 20mg.m <sup>3</sup>
Hydrogen Chloride	BS EN 1911 Parts 1 - 3
Organic Matter (excluding particulate matter)	BS EN 12619 up to 20mg/m <sup>3</sup> BS EN 13526 over 20mg/m <sup>3</sup>
Carbon Monoxide	BS EN 15058
Mercury	BS EN 13211
Polychlorinated dibenzo-p-dioxins and furans	BS EN 1948 parts 1 – 3
Oxygen	BS EN 14789

The regulator will be notified at least 7 days in advance of any annual extractive emission monitoring exercise, stating the methodology of the monitoring technique and the name, address and telephone number of the person who is to carry out the monitoring.

The results of all non-continuous emission testing shall be forwarded to the regulator within 8 weeks of the completion of the sampling.

## **CONTINUOUS MONITORING OF EMISSIONS**

The concentration of pollutants, in emissions to air from the cremator, will be continuously monitored for particulate matter, carbon monoxide, oxygen and temperatures, to demonstrate compliance with the emission limits as detailed in Table 4 of the Process Guidance Note PG5/2 (12).

Continuous monitoring equipment will be operated, maintained and calibrated (or referenced) in accordance with manufacturer's instructions, which shall be made available for inspection by the regulator. The relevant maintenance and calibration (or referencing) will be recorded.

All continuous monitoring readings will be continuously displayed to operating staff.

All continuous monitoring instruments will be fitted with audible or visual alarms which shall activate at reference levels agreed with the regulator, and the activation of alarms shall be displayed to operating staff and will be automatically recorded.

### **PARTICULATE MATTER**

Particulate Matter at the outlet from the abatement bag filter will be continuously monitored by an electrodynamic probe (PCME) and will function as a filter leak monitor.

A reference level of 20% of the opacity limit is set as the filter leak monitor, however automatic corrective control is taken at a level of 6% of the opacity limit.

An instrument health check shall be carried out annually.

### **CARBON MONOXIDE and OXYGEN**

Carbon Monoxide and Oxygen concentrations at the outlet from the secondary chamber will be continuously qualitatively monitored using the Fuji ZRJ Multi Gas Analyser.

Data shall be acquired at intervals of 15 seconds or less.

The continuous monitoring instrument for Carbon Monoxide and Oxygen shall be checked for correct functioning daily, and will be calibrated in accordance with manufacturer's recommendations at least once a year.

### **TEMPERATURE**

The secondary combustion zone temperature will be measured at the last measuring thermocouple and will be automatically recorded.

Visual alarms will activate if the temperature falls below 1073K (800<sup>o</sup>) and will be automatically recorded.

The Primary Chamber temperature and the Secondary Chamber inlet temperature will also be automatically recorded.

### **VISIBLE and ODOUROUS EMISSIONS**

Daily Visual and olfactory assessments of emissions will be carried out by a nominated person, suitably versed in the operation of the process whilst the cremator is in normal operation.

The results of this daily assessment together with wind and weather conditions will be recorded in the logbook.



## **REPORTING CONTINUOUS MONITORING DATA**

In accordance with the requirements of the Process Guidance Note PG5/2 (12):

Every 6 months Sirhowy Valley Crematorium will submit a report containing the following continuous monitoring data for carbon monoxide covering each period of a calendar month:

1. Values that exceed the 95% limit for carbon monoxide in that period;
2. 60 minute mean emission values that exceed the 100% limit for carbon monoxide in that period;
3. A list of the highest 60 minute mean emission values for each period;
4. The 95th-percentile value for each period.

Every 6 months Sirhowy Valley Crematorium will submit a report containing the following continuous monitoring data for temperature and oxygen covering each period of a calendar month:

1. Secondary chamber entrance temperature, monthly maximum and minimum (of 5-minute averages);
2. Secondary chamber exit temperature, monthly maximum and minimum (of 5-minute averages);
3. Oxygen concentration, monthly minimum (of 5-minute averages).

Where any values have been exceeded in any monthly or 6-monthly reporting period, the submitted reports will specify the number of times the limit was exceeded during the reporting period, the levels of the exceedance, and the time, date and cremation reference.

### **Other reporting**

The regulator will be informed without delay, whether or not there is related monitoring showing an adverse result:

- if there is an emission that is likely to have an effect on the local community; **or**
- in the event of the failure of key arrestment plant, for example, the filtration plant; **or**
- in the event of the use of the bypass or emergency relief vent.

Adverse results from any monitoring activity (both continuous and non-continuous) will be investigated by the operator immediately. The Operator will:

1. Identify the cause and take corrective action;
2. 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;
3. Re-test to demonstrate compliance as soon as possible; and inform the regulator of the steps taken and the re-test results.

### **CAMEO**

Sirhowy Valley Crematorium will send to the regulator, by no later than 1<sup>st</sup> April each year, a certificate from the Crematoria Abatement and Mercury Emissions Organisation (CAMEO) which specifies the total number of cremations in the previous calendar year.