

Site Reference: EPR/B/5.1/PWC

Date Inspected: 22nd September 2016

Inspection Type: Full Inspection

Person Seen: Jason King

Site Name & Address: Parndon Wood Crematorium, Parndon Wood Road, Harlow, Essex CM19 4SF

Inspected By: Fay Rushby
Steven Adams

1. Best available techniques

Condition 1.1 to 1.2:

Residual BAT conditions:

- The residual BAT conditions do not need to be used at this time.

2. Extent of the installation

Condition 2.1:

Installation boundary:

- All permitted activities are being undertaken within the installation boundary.

3. Combustion conditions

Condition 3.1 and table 3.1:

Combustion parameters:

- Secondary combustion chamber temperatures are continuously monitored and recorded. Cremators are interlocked to prevent cremator loading if the secondary chamber is less than 800°C.
- Secondary combustion chamber oxygen % is continuously monitored and recorded.
- Secondary combustion chamber gas residence time has been confirmed as > 2 seconds.
- A summary of the parameters at the time of the inspection is as follows:

Parameter	Cremator 1	Cremator 2	Limit
Time into cremation	105 mins		-
Primary chamber temperature	788		-
Secondary chamber inlet temperature	868	Not in use at time of visit	>800°C
Secondary chamber outlet temperature	891		>800°C
Suction	8.2		-

4. Emissions release points

Condition 4.1:

Emissions release points

- Emissions release points remain as permitted.

5. Emission limits

Conditions 5.1 to 5.8:

Extractive emissions monitoring was undertaken on 27th January 2016. A summary of the results is as follows:

Parameter	Average Emissions	Limit
Total particulate matter	0.32 mg/m ³	<20
Hydrogen chloride	37.66 mg/m³	<30
Carbon monoxide	3.35 mg/m ³	<100
Organic compounds	0.39	<100
Mercury	77.57	<50

- Mercury and HCL emission limits were exceeded.

Conditions 5.1 to 5.8 (continued):

Further extractive emissions monitoring was undertaken on 15th March 2016. A summary of the results is as follows:

Parameter	Average Emissions	Limit
Total particulate matter	1.33 mg/m ³	<20
Hydrogen chloride	12.32 mg/m ³	<30
Carbon monoxide	3.44 mg/m ³	<100
Organic compounds	0.46	<100
Mercury	17.56	<50

- All pollutants were within emission limits.
- It is noted that the manufacturer has reformulated the Factivate reagent.
- It is further noted that both monitoring exercises were completed in the 2015/2016 inspection year.

Extractive emissions monitoring is next due in January 2017.

- Please ensure that 7-days' notice of the date of the monitoring exercise is provided.

A summary of the emissions at the time of the inspection is as follows:

Parameter	Cremator 1	Cremator 2	Limit
Time into cremation	105 mins	-	-
%O ₂	18.8%	-	Min 3%
Particulate matter	0.0 mg/m ³		20 mg/m ³
Carbon monoxide	0.0 mg/m ³		100 mg/m ³

- Emissions were free from visible smoke.
- No odours (offensive or otherwise) were noted.
- There were no persistent visible emissions.
- Emissions were free from droplets.
- A record of gas consumption is kept. Quarterly figures are available for inspection on request.

6. Monitoring techniques

Conditions 6.1 to 6.10:

Continuous emissions monitors (CEMs) were operational at the time of the inspection:

- Readings were on clear display to operating staff.
- Alarm activations are automatically recorded.
- Analysers are maintained and calibrated. Service reports are reviewed by email.
- Ducts are fitted with sampling points.
- Each cremator has a gas meter.

7. Controlling techniques

Conditions 7.1 to 7.20:

Control techniques are designed to minimise emissions from the cremation process as far as practicable:

- Cremators appear to be designed and operated to minimise emissions during charging.
- The volume of the secondary combustion chamber is to be confirmed with the residence time calculation.
- Cremator charge systems are interlocked.
- Cremators and ductwork were gas-tight.
- It is recommended that funeral directors be periodically reminded about coffin construction.
- Construction standards for cardboard and wicker coffins are noted. Cardboard coffins in particular must not contain chlorine in the wet strength agent e.g. not using polyamidoamine-epichlorhydrin based resin (PAA-E).

Conditions 7.1 to 7.20:

- 100% of cremators are abated for mercury (single abatement plant serves multiple cremators).
- The by-pass system has been used, however the correct notifications were made, and the bypass event was less than 48-hours.
- Dusty filter wastes are contained.
- Calcination was complete on rake-out of remains.
- Dusty emissions from cremated remains were minimised as far as practicable.
- A simple plan for mass fatalities is in place.

8. Reporting and notifying

Conditions 8.1 to 8.12:

Reporting and notifications:

- The 2015 CAMEO certificate was received.
- Monthly cremation reports are received by email. Many thanks.
- Monthly reports indicate that few secondary combustion chamber temperature excursions are reported.
- Extractive sampling results are required within 8 weeks of the sampling date.

9. Maintenance

Conditions 9.1 to 9.3:

A maintenance programme for the cremators is in place.

- A maintenance programme is in place.
- A record of reagent use is kept.
- Cremator service reports are emailed on receipt.

10. Training

Conditions 10.1 to 10.2:

Training certificates for cremator operators are displayed in the crematory area.

11. Logbook

Conditions 11.1 to 11.3:

Records amounting to the logbook are generally available on site or on request.

Requirements for action: *You must ensure that requirements are completed within any timescale detailed below, otherwise the requirement must be implemented immediately (i.e. without delay):*

1. Extractive Emissions Monitoring.

Please ensure that at least 7-days prior notification of the extractive testing is received.

Signed:



Environmental Health Officer

Date of Report:

30th September 2016