



Sewardstone Park
Cemetery

Draft

Environmental Procedures

For

Environmental Permitting



Environmental Procedures

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1. Introduction

Sewardstone Park Crematorium holds an Environmental Permit for the cremation of human remains from Epping Forest District Council (the Regulator).

Environmental permits contain operating conditions that are legal requirements and should be read and understood by ALL cremator operators and managers.

Environmental Health Officers regulate crematoria, and regular inspections will be undertaken to ensure that we are operating in accordance with our environmental permit.

It's important that the Regulator is kept up to date with regular reports and if there are any issues such as:

- Emission limits exceedences.
- visible smoke or detectable odour
- Secondary combustion chamber temperature excursions.
- Abatement plant bypass.

Epping Forest District Council has a responsibility to the public, so if we have an incident that will result in smoke leaving the chimney and we have reported this, the Regulator will then be able to explain to the public should they make a complaint.

These operating procedures are designed to be an outline guide to complement ICCM and specific cremator operating training to ensure that we remain compliant with our permit conditions and maintain a great working relationship with our neighbours and the Regulator.

The Environmental Permit can be found in Appendix 1.



2. Daily and weekly checks

The following daily and weekly checks help to confirm that we have good combustion during cremation, and the thermocouples and emissions monitors are reading correctly. The O₂ probe and CO monitor feed data into the PG5 monthly cremation reports. Daily checks on the data gathering equipment are undertaken to ensure that the data is the best quality possible, and a Cremator weekly records sheet is completed to confirm that checks have been made (Master copy in Appendix 2).

Version 12-12-2019		Instruction: A-F Check on daily basis, fill in on weekly basis G-L Check on weekly basis, empty if necessary							
Control list DFW Cremation installation									
To fill in with cremator off (exception control of E3 and I1)									
Week no									
Name controller									
A Temperatures									
A1	Main Chamber								
A2	Secondary Chamber								
A3	Dust Filter								
B Pressures									
B1	Draught cremator Normal: 0-20Pa								
B2	Difference pressure dust filter Normal: 0-75Pa								
C Heat Exchanger/ Boiler									
C1	Water temperature Normal: 70-95°C								
C2	Water pressure Normal: 1,5-2,5bar								
D Expansion tank									
D1	Water pressure Normal: 1,5-2,5bar								
D2	Contents/ Filling Normal: 20-80%								
E Oxygen monitor									
E1	Oxygen percentage control monitor Normal: 19-21%								
E2	Oxygen percentage analyser Normal: 19-21%								
E3	Aspirator air pressure Normal: 0,3-0,5bar (Oven on)								
F Air pressure									
F1	Air pressure control monitor Normal: 6-10bar								
F2	Air pressure compressor Normal: 6-10bar								
F3	Oil/water separator filling water reservoir								
F4	Visual and Acoustic control								
F5	Control service lamp compressor								
F6	Cleaning air ribs cooler if necessary								
F7	Control oil level compressor								
F8	Control ductwork on leakage								
F9	Working hours (Counter on compressor)								



G Dust filter									
G1	Filling dust barrel in percentage								
G2	Condition filling dust barrel Wet or dry								
H Spark arrestor									
H1	Filling dust vessel in percentage								
H2	Condition filling dust vessel Wet or dry								
I Flue gas fan									
I1	power in % on control monitor Normal: 0-80% (Cremation in proces. measurement around 30 minutes after start)								
J Control installation									
J1	Control visual connections water ductwork								
J2	Control visual connections flue gas ductwork								
J3	Control visual boiler								
J4	Control visual dust filter + AC box								
J5	Control acoustic (pumps, fans, compressor)								
J6	Control room temperature in °C Normal: 15-25°C								
K Handpump									
K1	Does the handpump work correct?								
L Consumption									
L1	Counter gas meter (m3)								
L2	Counter electricity meter (kWh)								

3. Abatement plant bypass

The DFW cremator is designed to be fully automatic, fail to safe cremation system. In the event of pressure or temperature significantly above normal operating parameters, the bypass system may operate in order to protect both the creator and the abatement plant from damage.

Bypass will automatically operate in the event of power supply interruption

The Regulator Must be notified without delay of all bypass incidents:

Environmental and Regulatory Services
Epping Forest District Council
Civic Offices
High Street
Epping
Essex
CM16 4BZ

TEL: 01992 564000

Email: environmentalhealth@eppingforestdc.gov.uk

If the bypass was the result of a specific cremation incident, follow-up with the Funeral Director, particularly if any unexpected objects are found with the remains (for example glass / metal items). Use the notes section as much as possible and include any occurrence of smoke and/or odour.

A record must be kept of all abatement plant bypass, including the following details:

- Date of the bypass
- Time of the bypass
- Cremation number (no personal details)
- Reason for the bypass (if known)
- An assessment of any smoke/odour emitted
- Date of Regulator notification*
- Time of Regulator notification*
- Comments (any other useful information or actions taken)

* it is assumed that bypass notifications to the Regulator will be by email. Retain a copy of the email with the bypass log.



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Bypass log

Bypass event details					EHO Notification		Comments:
Date:	Time:	Cremation No.:	Reason for bypass:	Smoke/odour?	Date:	Time:	
25/05/2025	15:32	12345	Power supply interruption	Slight smoke	25/05/2025	16:00	Emailed EHO. No further action

The abatement plant bypass log can be found in Appendix 3.



4. Abatement plant maintenance

The appointed service agent will oversee all maintenance of the abatement plant, including the following:

- Topping up the mercury abatement filter media
- Replacing the mercury abatement filter media
- Replacing the dust filter elements

Whilst the service record sheets will contain full details of all maintenance undertake, it is extremely helpful to keep a separate record of abatement plant maintenance



Abatement plant maintenance

Machine number:	Mercury filter media top-up date:	Mercury filter media replacement date:	Dust filter cartridge replacement date:	Cremation number:	Additional notes / comments:
1	25/05/2025	N/A	NA	1500	Mercury filter media will need replacing in around 500 cremations time

An example recording sheet is shown above, and can be found in Appendix 4.



5. Emissions notifications

Certain emissions must be reported to the Regulator.

A notifiable emissions exceedance is one that is in excess of **double** the specified emission limits are:

- 20mg/m³ for particulate matter
- 100mg/m³ for carbon monoxide
- Smoke or odour likely to affect the local community

The Regulator Must be notified without delay of all reportable emissions:

Environmental and Regulatory Services
Epping Forest District Council
Civic Offices
High Street
Epping
Essex
CM16 4BZ

TEL: 01992 564000

Email: environmentalhealth@eppingforestdc.gov.uk

A record must be kept of all reportable emissions, including the following details:

- Date of the emission
- Time of the emission
- Cremation number (no personal details)
- Reason for the emission (if known)
- An assessment of any smoke/odour emitted
- Date of Regulator notification*
- Time of Regulator notification*
- Comments (any other useful information or actions taken)

* it is assumed that emissions notifications to the Regulator will be by email. Retain a copy of the email with the bypass log.

 Sewardstone Park Cemetery							
Emissions log							
Emissions event details					EHO Notification		Comments:
Date:	Time:	Cremation No.:	Details of emission:	Smoke/odour?	Date:	Time:	
25/05/2025	15:32	12345	CO emissions twice permitted limit	None	25/05/2025	16:00	Emailed EHO. No further action

The emissions log can be found in Appendix 5.



6. PG5 Monthly Reporting

The PG5 report is a monthly report that is generated by the DFW software, this report will tell you what issues/ exceedances have been breached during the previous month's cremations. You must read through the report carefully to make sure there are no excursions/exceedances.

DFW Europe B.V.
Dulleweg 43
1721 PM Broek op Langedijk
The Netherlands
Tel: +31 226 342 909
Fax: +31 226 342 461
Mail: info@dfweurope.com

Monthly report for:
Cremator number: 1
Report for the month starting:
01-05-2020
Total number of cremations =
150

Table 1: Combustion Provisions - 5 min average

	PG5 Criteria	Average value for period	Minimum value	Minimum value
Secondary Chamber Blat Temperature (°C)	850 °C unabated 800 °C abated	812	800	1190
Secondary Chamber Post Temperature (°C)	850 °C unabated 800 °C abated	891	737	1384
Oxygen % measured wet or dry	Average 6% Minimum 5%	12.9	1.3	18.3

Table 2: 95th percentile emission value for period

Substance	95th percentile mg/m ³
Particulate matter unabated crematoria only	NA
Carbon monoxide (all crematoria)	6.39

Table 3: Values that exceed the 95th limit (95 minute average) for:
Carbon monoxide and particulate on unabated plant
Carbon monoxide on abated plant operating to emission levels in PG52 (12) Table 4 item 4b

Parameter	Value	Date	Time
NA	NA	NA	NA

Table 4: 60 minute mean emission values that exceed 100% limit for carbon monoxide on all plants and particulate for unabated plant

Parameter	Value	Date	Time
NA	NA	NA	NA

Table 5: Highest 95 minute mean emission value for the period

Parameter	Value	Date	Time
Carbon Monoxide (all crematoria)	12.4	2020-05-05	03:46:11
Particulate (unabated crematoria only)	NA	NA	NA

Table 6: Limit exceedances during the period
Number of Oxygen excursion below limit 4
Exceedances
Secondary Chamber Temperatures - 5 minute average below the minimum limit (850°C unabated, 800°C abated)
Oxygen - 5 minute averages below 3% wet or dry
- 60 minute averages below 6% wet or dry

Parameter	Value	Date	Time
Secondary Chamber < 850 °C	716	2020-05-01	08:02:14
Secondary Chamber < 850 °C	736	2020-05-01	09:31:23
Secondary Chamber < 850 °C	736	2020-05-01	08:12:38
Secondary Chamber < 850 °C	712	2020-05-01	09:19:01
Secondary Chamber < 850 °C	760	2020-05-01	08:27:44
Secondary Chamber < 850 °C	736	2020-05-01	09:27:04
Secondary Chamber < 850 °C	736	2020-05-01	08:32:44
Secondary Chamber < 850 °C	736	2020-05-01	09:31:04
Secondary Chamber < 850 °C	808	2020-05-01	08:47:53
O ₂ 5 min	2.8	2020-05-01	13:40:43
O ₂ 5 min	2.8	2020-05-01	13:44:52
O ₂ 5 min	3.8	2020-05-02	09:02:19
O ₂ 5 min	2.9	2020-05-02	11:14:03
O ₂ 5 min	2.9	2020-05-02	11:36:02

Any secondary combustion chamber temperature or % Oxygen less than the prescribed minimum value will be reported here.

CO emissions measured by our own analysers will be detailed here. The report details the highest 60 minute averages. The limit for CO is 100mg/m³. Any emissions that were double the emission limit will also be detailed here. Particulates for abated machines do not need to be reported.

The specific cremations resulting in the secondary combustion chamber temperature or % Oxygen less than the prescribed minimum value, or emission limits exceedances will be detailed here.

If for any reason emission limits exceedances or secondary combustion chamber temperature excursions occur, you will need to:

- 1) find out why this happened
- 2) what you did to correct this issue
- 3) what you will do to prevent such issues in the future.

It is very important that these reports are made available to the Regulator on request.

7. Extractive emissions monitoring

The Environmental Permit requires extractive emissions monitoring annually. This could be interpreted as once per calendar year or once every 12-months. It is better to work on once every 12-months.

The emissions test is principally checking the performance of the abatement plant.

At least **7-days prior notice** **MUST** be given to the Regulator of the intention to undertake emissions monitoring:

Environmental and Regulatory Services
Epping Forest District Council
Civic Offices
High Street
Epping
Essex
CM16 4BZ

TEL: 01992 564000

Email: environmentalhealth@eppingforestdc.gov.uk

The emissions monitoring report **MUST** be forwarded to the Regulator within **8-weeks** of the date of the emissions testing, regardless of the result.

In the event of an adverse result, we will be expected to investigate the reason for the emissions failure, take action to rectify any fault or defect found and to re-book confirmation monitoring for the specific pollutant that failed the emissions test.

Important Note:

Exhaust gas flows are lower for electric cremators, therefore sampling time may need to be extended for certain pollutants in order to ensure that a representative sample is obtained.

Obtain a Site Specific Sampling Protocol (SSSP) from the testing organisation in advance of the test, and seek approval from the Regulator for the proposed sampling methods.

Ensure that there are sufficient cremations to ensure representative monitoring is undertaken. This may require that the previous days cremations are held-over. **Pre-planning is essential.**



8. Pandemic plan

PG5/2 requires that a simple plan should be drawn up for dealing with emergencies which give rise to mass fatalities or Pandemic, which should mainly address the holding of additional spares and consumables and the training of suitable numbers of staff.

In Pandemic, protection of crematorium operating staff from infection will be paramount, and access to the crematory area must be strictly limited to cremation technicians. Guidance of the day will differ for every Pandemic event depending on the nature of the epidemic. For example, ICCM Covid-19 guidance (attached).

The following procedure is a guideline, and depending on circumstances which led to mass deaths/pandemic you may need to work outside of these guidelines.

Mass Deaths Procedure

1. Upon receiving details, call one of the above to arrange cover, should you need to cremate continuously.
2. Speak to all staff and inform them of the situation.
3. Call all FD's and arrange a meeting to discuss logistics.
4. Call local authorities to gain permission to extend services through the evening. This includes the Regulator.
5. Hire or borrow adequate coffin racks. (If the mass deaths are down to a pandemic, you may need to hire a mobile fridge unit. Again, speak with one of the above before this.)
6. Email and call FD's to inform them that you will be extending your working hours to deal with the demand. This will include weekends if needed.
7. Call DFW and inform them that the cremator will be working continuously, and you will need 1 engineer on standby in case of breakdown. This will just be a precaution.
8. Make sure you have enough stock i.e. Remains Boxes, Thermocouples.
9. Finally call another meeting with staff to discuss shifts. This will need recording for payment.

There will be at least one Senior manager on site to oversee the situation. You are responsible for updating them on arrival. Please make sure you order refreshments i.e. water/sandwiches so that staff do not need to leave site. All staff must have adequate breaks if working long hours.



Coronavirus (COVID-19)



Guidance on the cremation and burial of those dying with Coronavirus

We have been informed by the Cabinet Office that the infection risk from a deceased person who died with the Coronavirus is no greater than the risk presented by somebody who died of flu. There is more risk of catching the virus from somebody who is living, therefore attention should be paid to minimising the risk from living people by following the Government's guidance on social distancing and good hand hygiene. Funeral services in cemeteries and crematoria are still permitted by the Government, but should be attended by immediate family only, and only where it is safe for them to do so.

Handling coffins

Current guidance is to treat the coffin the same as you would for any other coffin at this time.

For cremation:

- suitable PPE based on a risk assessment
- minimise manual handling
- charge into the cremator as soon after receipt as possible
- disinfect any surfaces the coffin has come into contact with
- dispose of PPE following handling - double bag waste before placing in your normal waste disposal system
- wash hands thoroughly with soap and hot water straight away (everyone involved in handling the coffin), or use a suitable hand sanitiser if soap and water are not available
- If the coffin leaks you will need to do what you would normally do with a body fluid spill

For burial:

- suitable PPE based on a risk assessment
- minimise manual handling
- consider having the coffin taken straight from the hearse or vehicle and lowering into the grave without resting on putlogs, boards etc
- consider using lengths of ropes that can be left in the handles and buried in the grave rather than webbing. The rope must be able to bear the weight of the coffin. The bearers should wear appropriate gloves to prevent rope burns when lowering
- disinfect any surfaces the coffin has come into contact with
- dispose of PPE following handling – double bag waste before placing in your normal waste disposal system
- wash hands thoroughly with soap and hot water straight away (everyone involved in handling the coffin), or use a suitable hand sanitiser if soap and water is not available
- If the coffin leaks you will need to do what you would normally do with a body fluid spill

Please be assured that the risk of catching the Coronavirus from a deceased person is very low. There is more risk from a living person with the virus touching the coffin, therefore this should be restricted to as few people as possible, and, if necessary, the coffin should be disinfected before further handling.



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Appendix 1: Environmental Permit



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Appendix 2: Daily and Weekly Check Sheet

Control list DFW Electric installation

To fill in with cremator off (exception control of E3 and J1)

Version 14-01-2021				Instruction: A-G Check on daily basis, fill in on weekly basis					
				H-M Check on weekly basis, empty if necessary					
	Week no								
	Name controller								
A	Temperatures								
A1	Main Chamber								
A2	Secondary Chamber								
A3	Dust Filter								
B	Pressures								
B1	Draught cremator Normal: 0-20Pa								
B2	Difference pressure dust filter								
C	Heat Exchanger/ Boiler								
C1	Water temperature Normal: 70-95°C								
C2	Water pressure Normal: 1,5-2,5bar								
D	Expansion tank								
D1	Water pressure Normal: 1,5-2,5bar								
D2	Contents/ Filling Normal: 20-80%								
E	Oxygen monitor								
E1	Oxygen percentage control monitor								
E2	Oxygen percentage analyser								
E3	Aspirator air pressure Normal: 0,3-0,5bar								
F	CEM System								
M1	O2 % Normal: <1%								
M2	CO ppm Normal: <10 ppm								
M3	Particulate Mg/m3 Normal: <5 Mg/m3								
G	Air pressure								
F1	Air pressure control monitor								
F2	Air pressure compressor								
F3	Oil/water separator filling water reservoir								
F4	Visual and Acoustic control								

F5	Control service lamp compressor								
F6	Cleaning air ribs cooler if necessary								
F7	Control oil level compressor								
F8	Control ductwork on leakage								
F9	Working hours (Counter on								

H	Dust filter								
G1	Filling dust barrel in percentage								
G2	Condition filling dust barrel Wet or dry								
I	Spark arrestor								
H1	Filling dust vessel in percentage								
H2	Condition filling dust vessel Wet or dry								
I	Flue gas fan								
I1	power in % on control monitor Normal: 0-80% <u>(Cremation in proces measurement around 30 minutes after start)</u>								
K	Control installation								
J1	Control visual connections water								
J2	Control visual connections flue gas								
J3	Control visual boiler								
J4	Control visual dust filter + AC box								
J5	Control acoustic (pumps, fans,								
J6	Control room temperature in °C								
L	Handpump								
K1	Does the handpump work correct?								
M	Consumption								
L1	Counter gas meter (m3)								
L2	Counter electricity meter (kWh)								



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Appendix 3: Bypass log

Appendix 4: Abatement plant maintenance log



Abatement plant maintenance

[illegible]



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Appendix 5: Emissions log



Emissions log

[illegible]

Appendix 6: CEM Manuals