

Annual performance report for: WasteNotts (Reclamation) Limited; Eastcroft Energy from Waste Facility

Permit Number: EPR/EP3034SN

Year: 2018

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

1. Introduction

Name and address of plant	Eastcroft EfW Incinerator Road Off Cattle Market Road Nottingham NG2 3JH
Description of waste input	Residual domestic and commercial & industrial waste.
Operator contact details if members of the public have any questions	info.eastcroft@fccenvironment.co.uk or by phone on 0115 9869505

2. Plant description

The EfW facility currently comprises two incineration streams each capable of burning up to 11.7 tonnes/hour of municipal and light commercial and industrial waste. Approximately 180,000 tonnes of waste can be burned in the plant per year at the present time. FCC Environment the owner of WasteNotts (Reclamation) Ltd has planning permission to add a third line to the plant. Planning permission was granted in 2009 for a third line which will increase the capacity of the incineration process to 300,000 tonnes per year. The third line is already included in the scope of the Environmental Permit (EP3034SN).

Municipal waste and non-hazardous commercial/industrial/trade waste is delivered to site by lorry and tipped into one of two refuse bunkers inside the tipping hall. Deliveries are typically made from Monday to Saturday morning. Waste is transferred from the bunkers by grab crane into the feed chute of each incinerator stream. Waste is only fed to the incinerator if the temperature is above 850°C.

Each incinerator stream has a moving grate on which the waste is burned, with preheated air being injected above and below the grate. Combustion air is drawn from the tipping hall and boiler hall to reduce odours and dust levels in these areas and fed to the furnace via an air preheater which can raise the temperature of the air up to 160°C. Two auxiliary burners, fired on gas oil, are installed halfway up each combustion chamber to maintain temperatures above the 850°C threshold. The auxiliary burners are also used to pre-heat the incinerators before start up. Ammonium hydroxide is injected into the furnaces to reduce emissions of nitrogen oxides (this technique is known as selective non-catalytic reduction or SNCR).

Hot gases from the combustion chamber pass to a boiler in which steam is raised and sent to the London Road Heat Station for supply of heat to the district heating system and generation of electricity. Flue gases leaving the boiler are cooled to about 130°C in the economiser to

achieve the correct temperature for gas treatment.

Grate ash (known as bottom ash) is quenched in water and collected in a residuals bunker inside the building. Ferrous metal items are removed by magnetic separators and the bottom ash is stored in a silo on site. The silo is emptied regularly and the bottom ash is sent for further metal extraction and use as a substitute aggregate.

Fly ash entrained within the incinerator exhaust gases, together with any accumulations of dust removed from the walls of the economiser by the shot cleaning system, is treated in the air pollution control equipment.

Each incinerator stream has its own dedicated air pollution control equipment. Cooled flue gases leaving the economiser are dosed with a mixture of hydrated lime, activated carbon and recirculated reagent, in order to reduce acid gases (by reaction with the lime), and other substances such as heavy metals and hydrocarbons (by adsorption onto the activated carbon). The exhaust gases and reagent particles are then filtered in a four compartment fabric filter to remove the dust burden. The fabric filters are regularly cleaned by reverse jet pulses, and the collected end product is stored in the APC residue silo. The APC residue silo is regularly emptied and the residue used to treat industrial acidic wastes before final disposal in a suitably licensed landfill site.

The treated exhaust gases from both streams are discharged via the 91m high stack. The final emissions from the municipal waste incinerator are continuously monitored for particulate matter, sulphur dioxide, nitrogen oxides, carbon monoxide, hydrogen chloride, volatile organic compounds and ammonia prior to entry into the main stack.

3. Summary of Plant Operation

Municipal waste received	167,348.47 tonnes
Commercial and industrial waste received	9,248.53 tonnes
Total waste received	176,597 tonnes
Total plant operational hours	15,811.5 hours
Total hours of "abnormal operation" (see permit for definition)	None
Total quantity of incinerator bottom ash (IBA) produced	35,312 tonnes
Disposal or recovery route for IBA	Recovery
Did any batches of IBA test as hazardous? If yes, state quantity	None
Total quantity of air pollution control (APC) residues produced	4,488 tonnes
Disposal or recovery route for APC residues	Disposal
Total heat produced for export (steam and hot water supply)	332,225 MWh

4. Summary of Plant Emissions

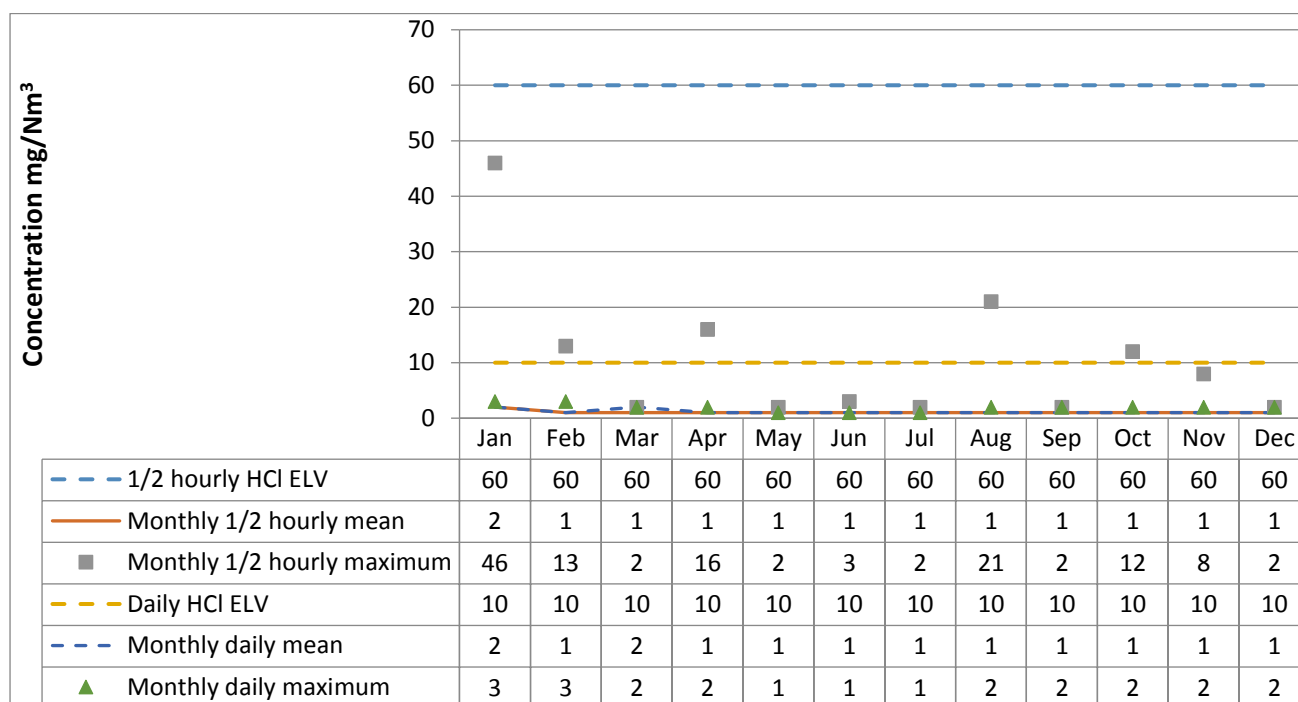
4.1 Summary of continuous emissions monitoring results for emissions to air

The following charts show the performance of the plant against its emission limit values (ELVs) for substances that are continuously monitored.

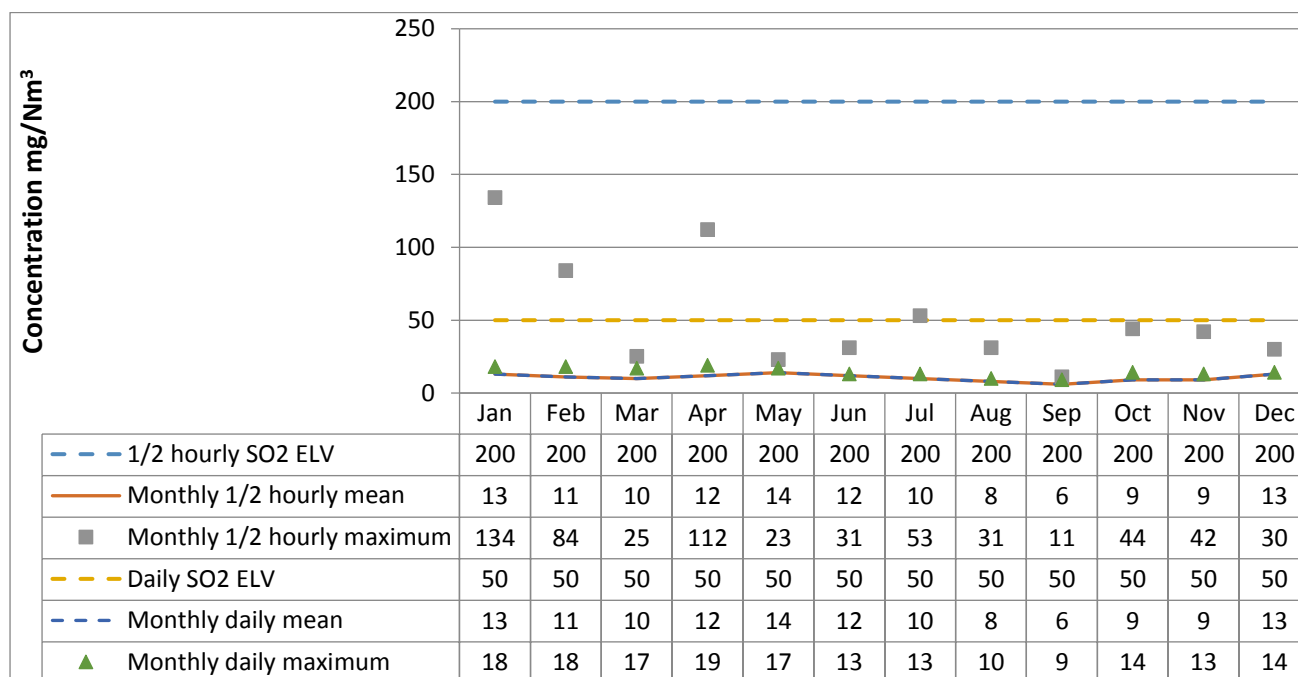


Monthly emissions
summary incl half-hou

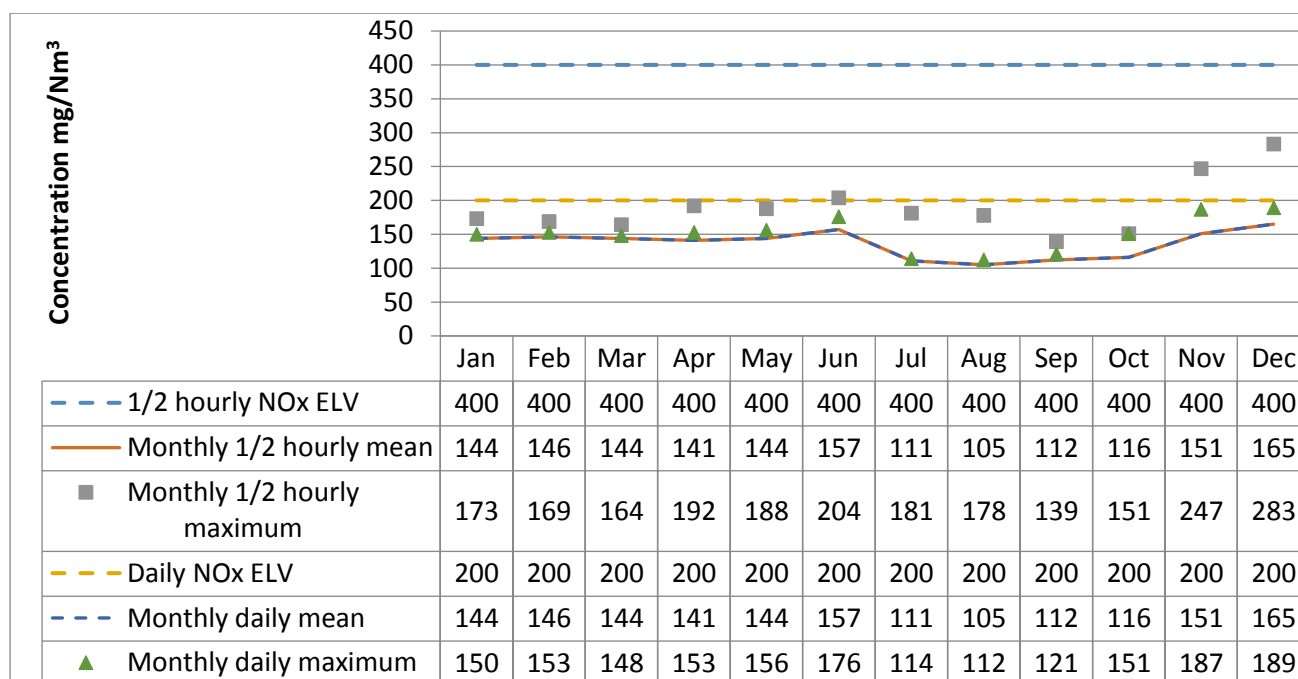
Line 1 - Hydrogen chloride



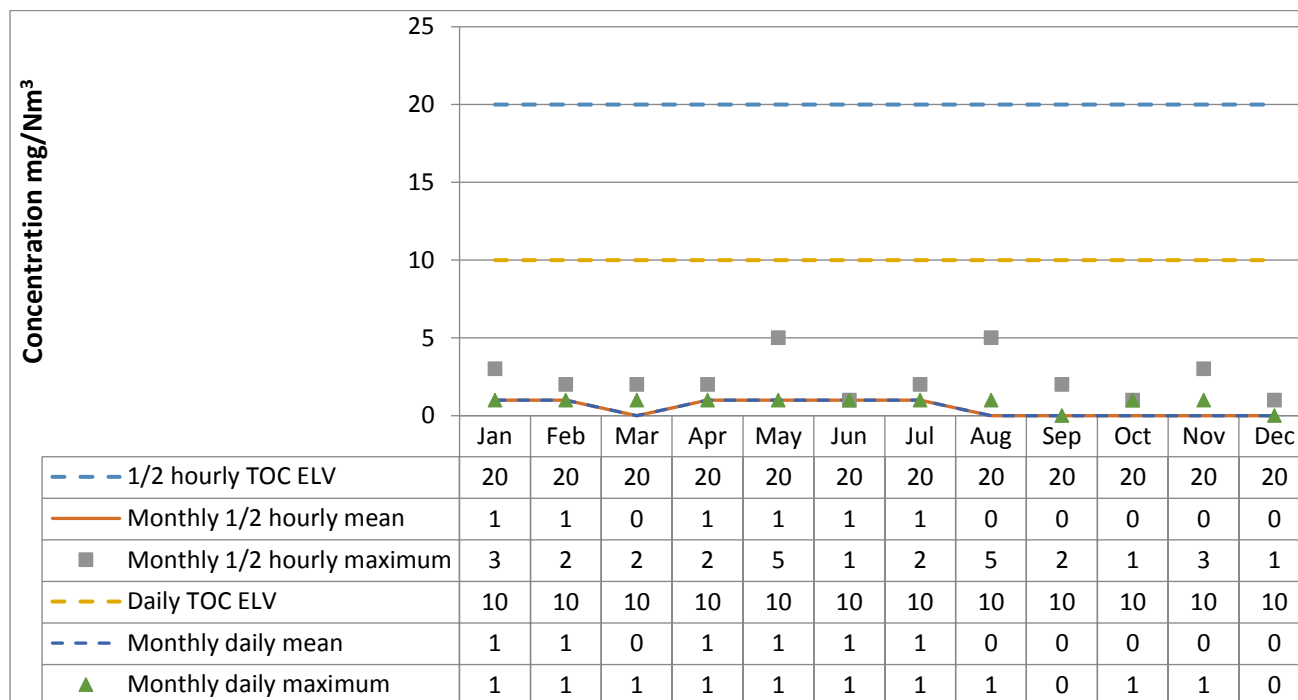
Line 1 – Sulphur dioxide



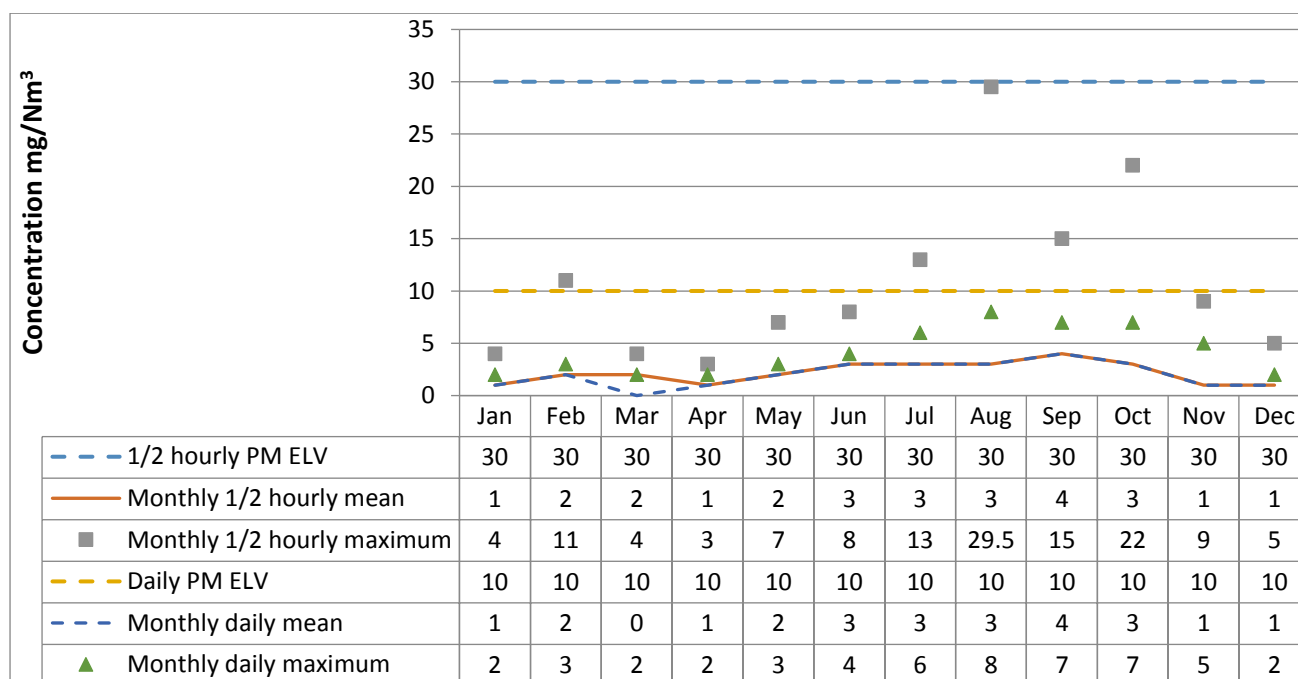
Line 1 – Oxides of nitrogen



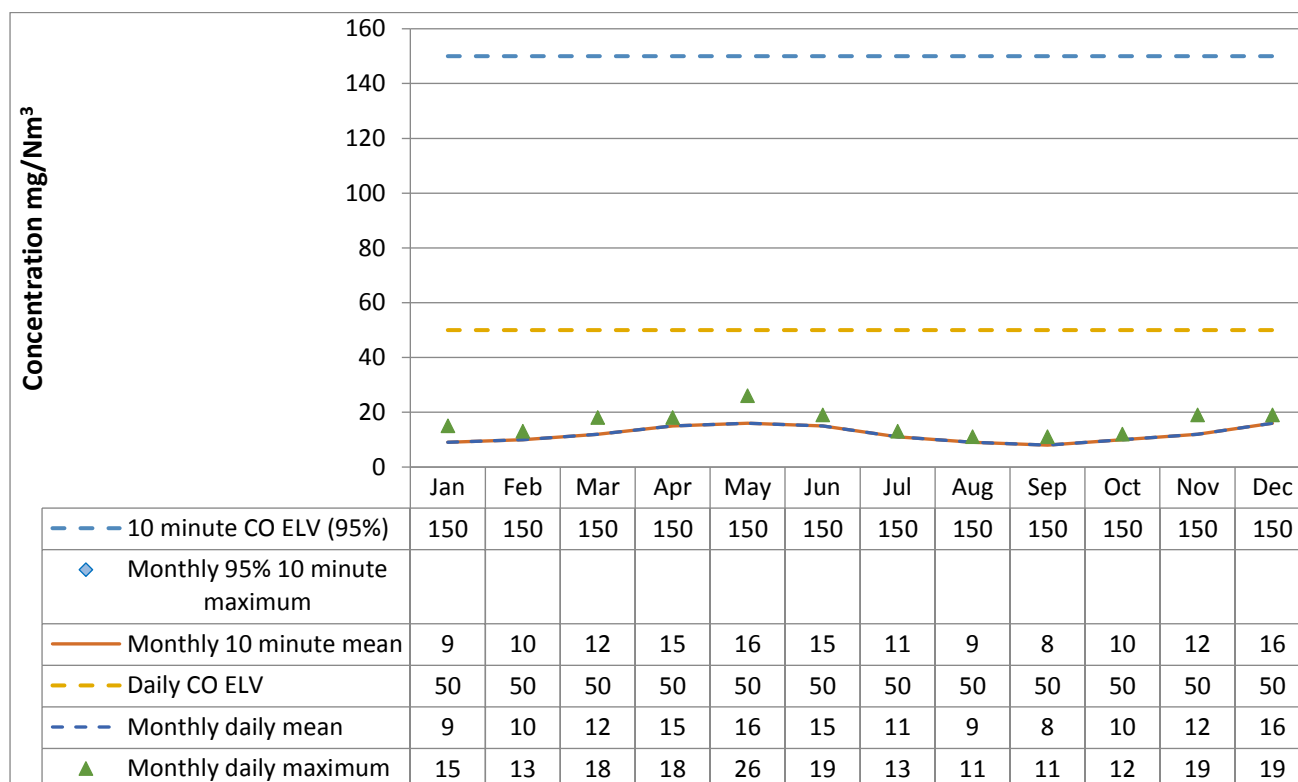
Line 1 – Total organic carbon



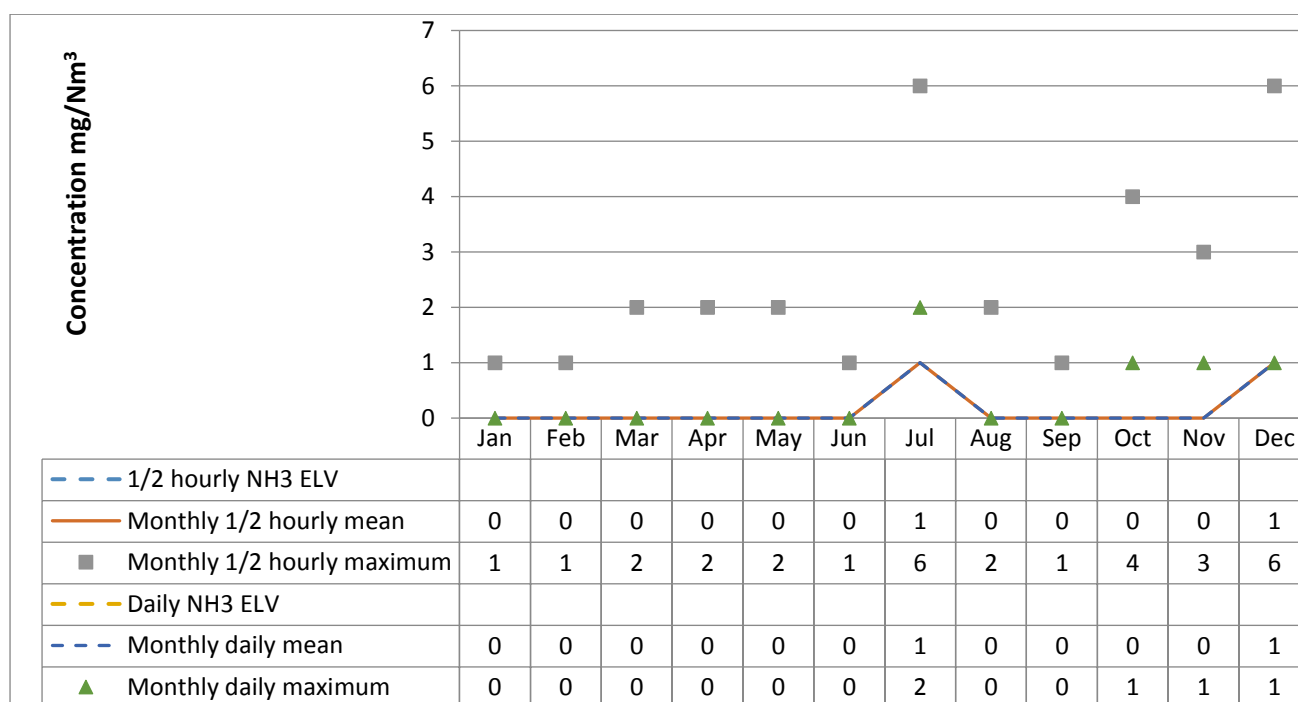
Line 1 – Particulates



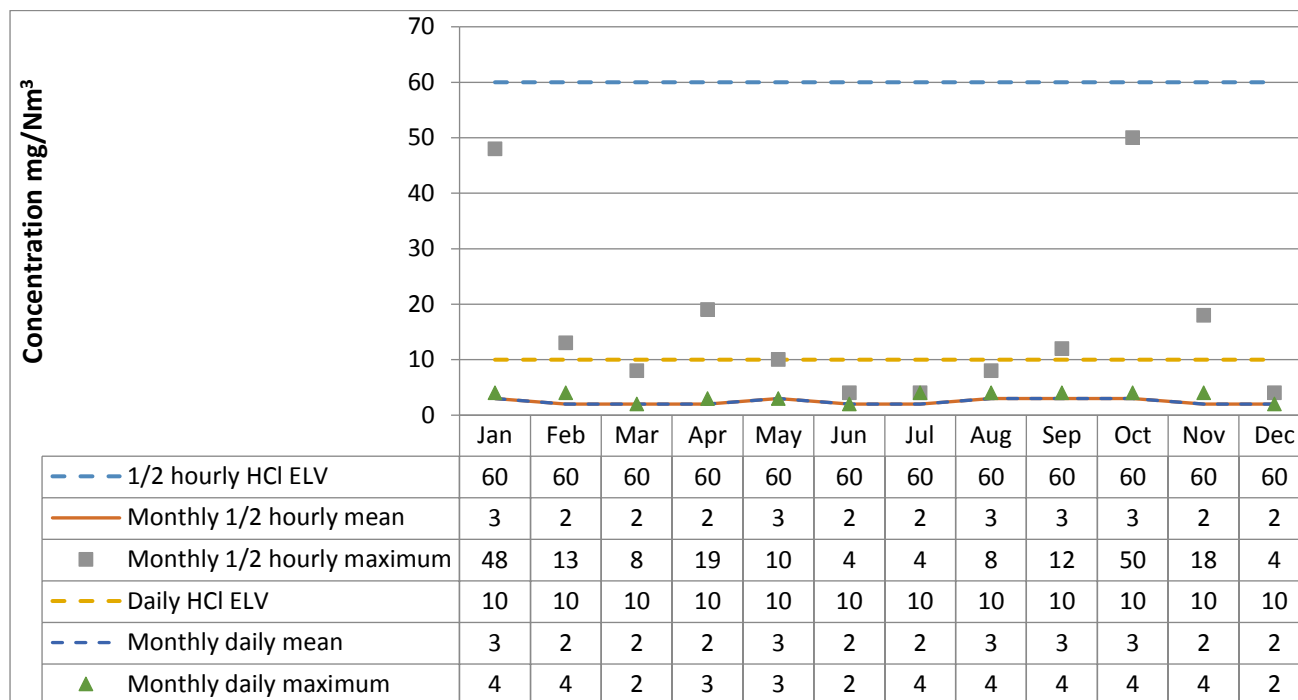
Line 1 – Carbon monoxide



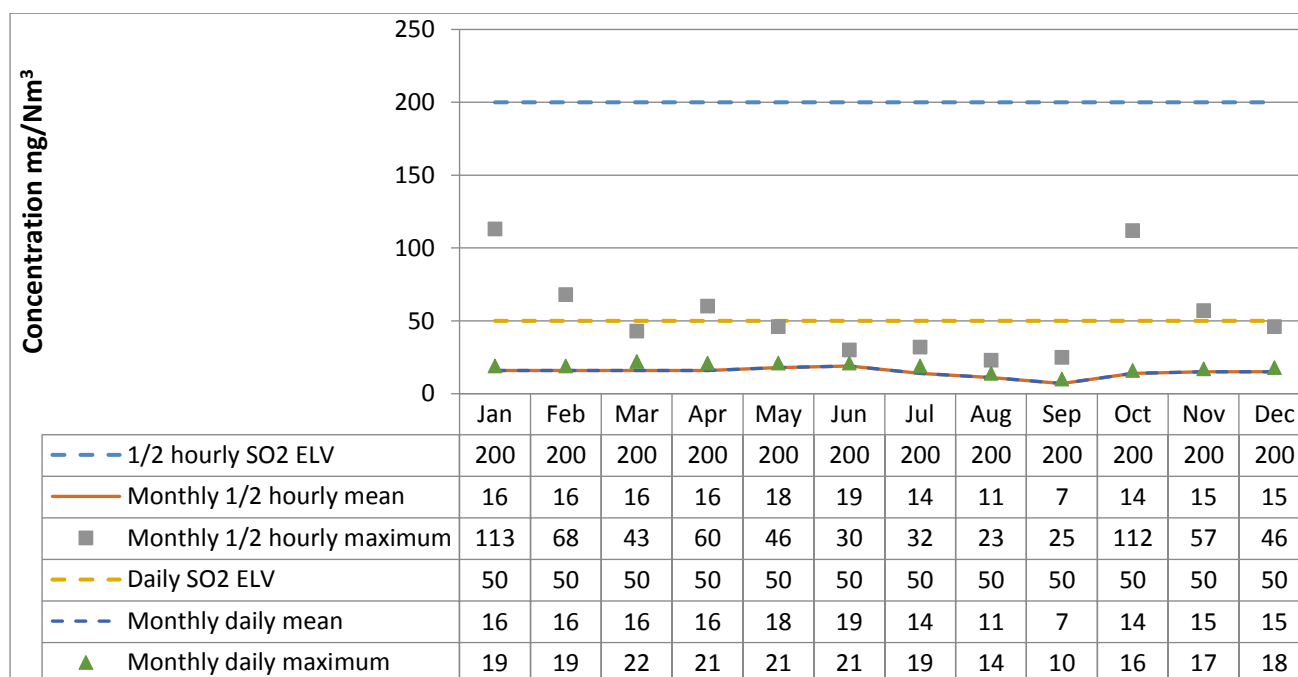
Line 1 – Ammonia



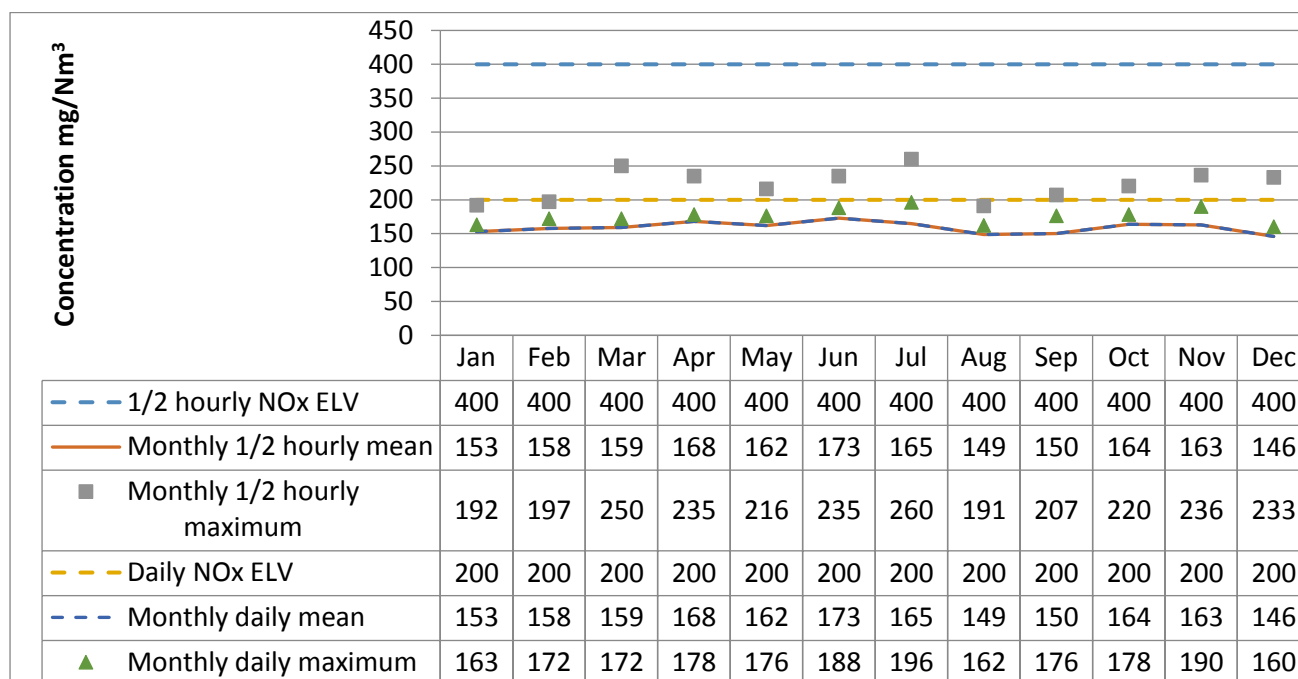
Line 2 - Hydrogen chloride



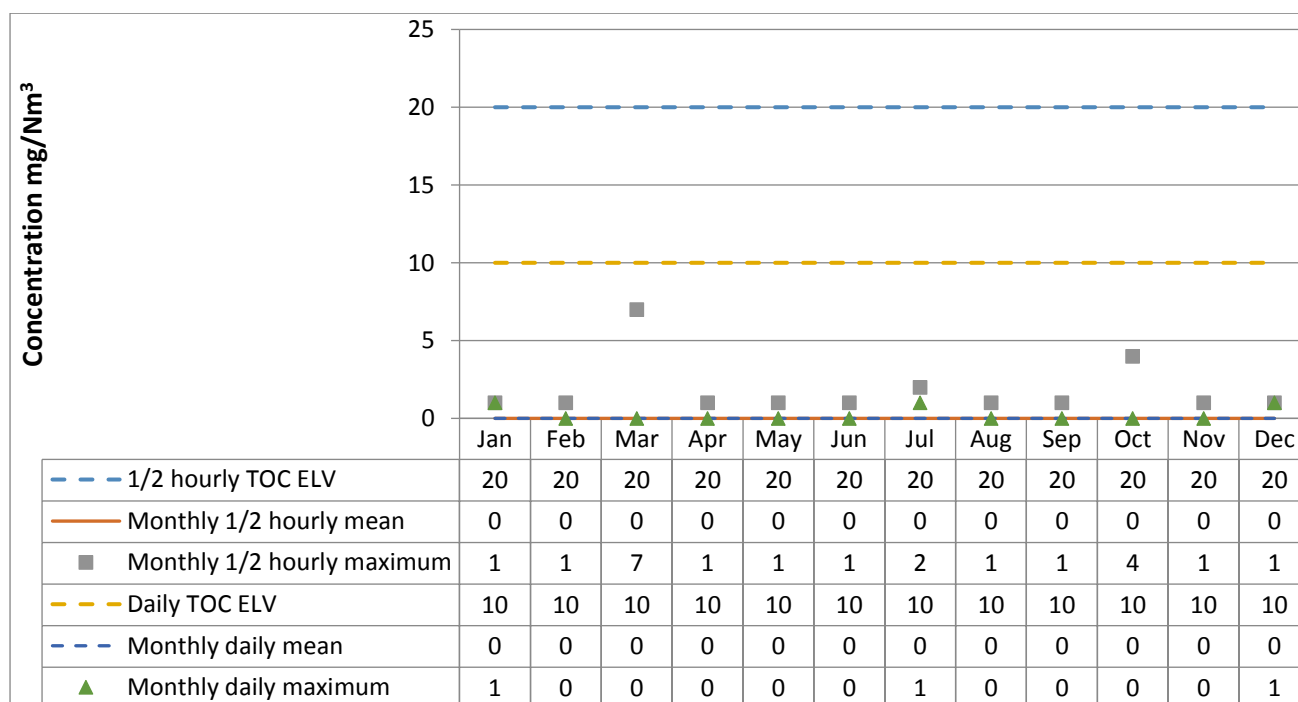
Line 2 – Sulphur dioxide



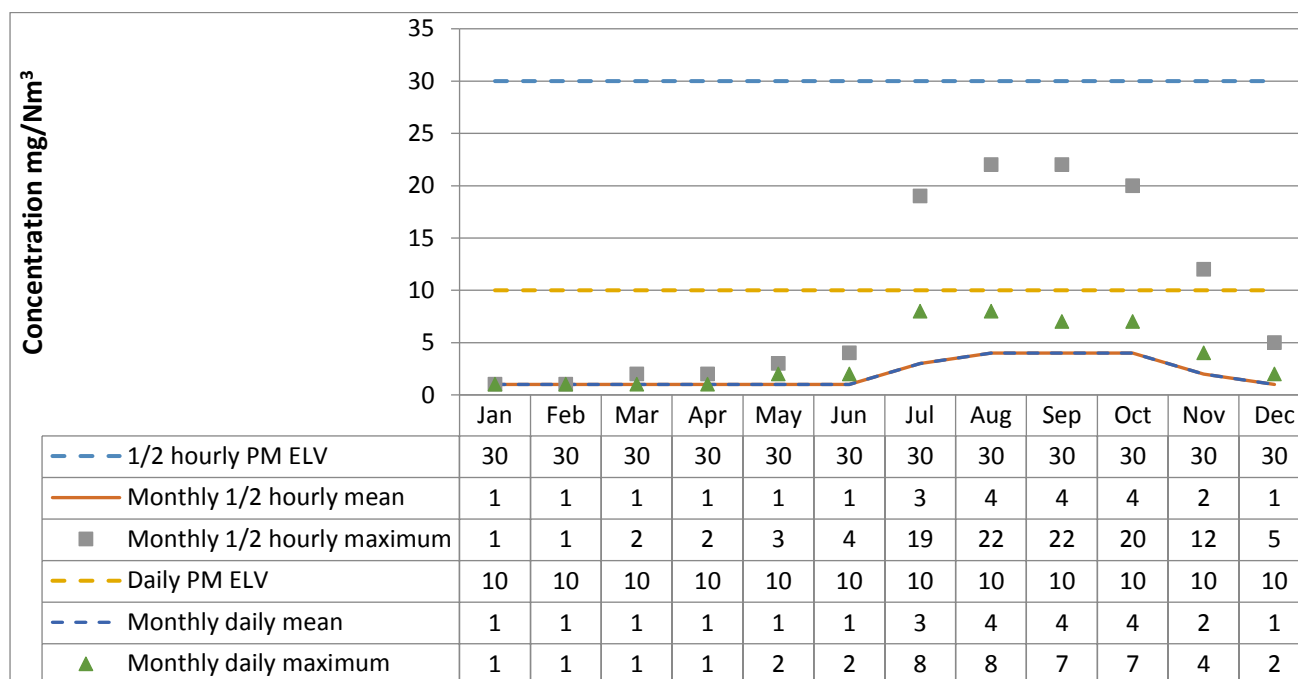
Line 2 – Oxides of nitrogen



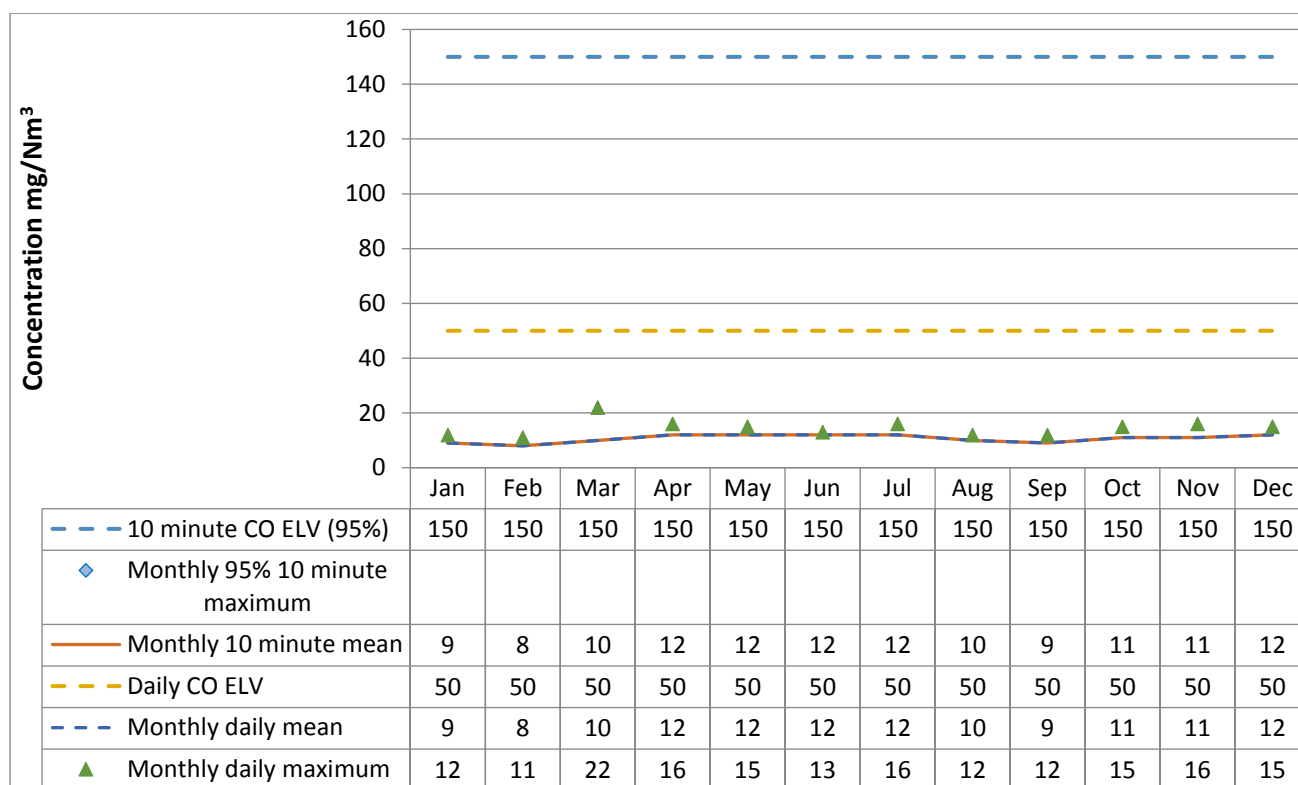
Line 2 – Total organic carbon



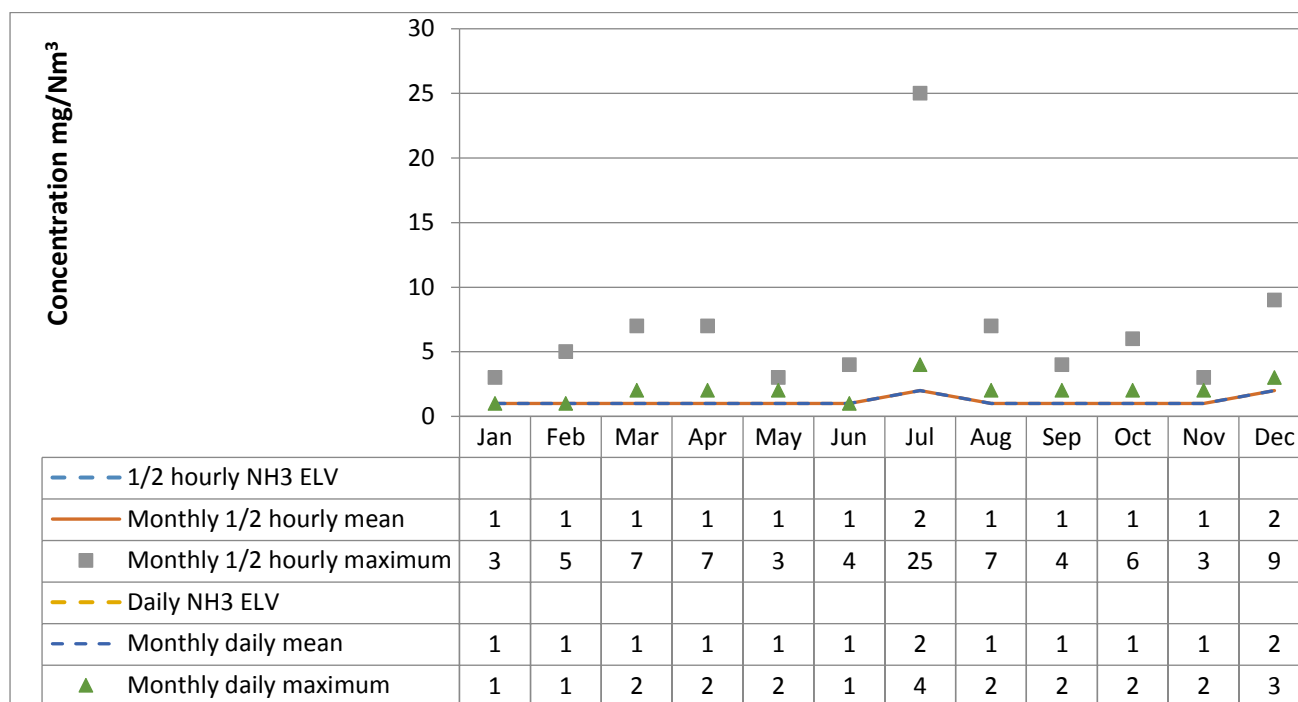
Line 2 – Particulates



Line 2 – Carbon monoxide



Line 2 – Ammonia



NB.

No emission limit value exists for Ammonia although monitored.

Values are rounded and so any value showing zero represents a value of less than 0.5mg/m³

Maximum 10 minute values are included with Excel file, but not within word versions of graphs following email instruction of 22/01/2019 from the Environment Agency.

4.2 Summary of periodic monitoring results for emissions to air

The table below shows the results of periodically monitored substances, A1 denotes line 1 results and A2 line 2.

Substance	Emission limit value	Results			
		02/2018 A1	02/2018 A2	12/2018 A1	12/2018 A2
Mercury and its compounds	0.05 mg/m ³	0.0005 mg/m ³	0.001 mg/m ³	0.0005 mg/m ³	0.0005 mg/m ³
Cadmium & thallium and their compounds (total)	0.05 mg/m ³	0.001 mg/m ³	0.001 mg/m ³	0.001 mg/m ³	0.002 mg/m ³
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m ³	0.01 mg/m ³	0.02 mg/m ³	0.03 mg/m ³	0.04 mg/m ³
Dioxins and furans (I-TEQ)	0.1 ng/m ³	0.012 ng/m ³	0.004 ng/m ³	0.014 ng/m ³	0.038 ng/m ³
Hydrogen Fluoride	2 mg/m ³	2.23 mg/m ³ NB. See note below	1.17 mg/m ³	0.55 mg/m ³	1.96 mg/m ³

Note – HF result was within confidence interval of limit, investigation and additional testing showed results well within emission limits at 0.58 mg/m³

4.3 Summary of monitoring results for emissions to water

There are no emissions to water which require monitoring by the permit.

5. Summary of Permit Compliance

5.1 Compliance with permit limits for continuously monitored pollutants

The plant met its emission limits as shown in the table below.

Substance	Percentage time compliant during operation	
	Half-hourly limit	Daily limit
Particulates	100%	100%
Oxides of nitrogen	100%	100%
Sulphur dioxide	100%	100%
Carbon monoxide	100% 95% of 10-min averages	100%
Total organic carbon	100%	100%
Hydrogen chloride	100%	100%

5.2 Summary of any notifications or non-compliances under the permit

Date	Summary of notification or non-compliance	Reason	Measures taken to prevent reoccurrence
29/01/2018	Result for Hydrogen Fluoride within confidence limit of ELV	Flue gas temperatures during cold period	Demolition and rebuild of bag filter house.

5.3 Summary of any complaints received and actions to taken to resolve them.

Date of complaint	Summary of complaint	Reason for complaint including whether substantiated by the operator or the EA	If substantiated, measures to prevent reoccurrence
24/10/2018	Odour at adjacent industrial estate	Unsubstantiated following extensive checks.	

6. Summary of plant improvements

Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.
None resulting from a permit improvement condition
Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact.
None
Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.
Planned maintenance of the facility including the complete rebuild of the bag filter bag house for each line in order to ensure continued compliance levels.

7. Details of any public liaison planned for 2019

Date and time	Description	Location
9/01/2019	Community Liaison meeting	The Embankment; Nottingham
17/07/2019	Community Liaison meeting	TBC

If you wish to be involved in the public liaison programme, please contact info.eastcroft@fccenvironment.co.uk 0115 9869505

