

**Annual Performance Report
for
Eastcroft Energy from Waste
Facility**

Permit No: EP3034SN

Year – 2008



Report produced by

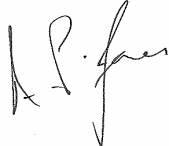

Waste Recycling Group
On behalf of WasteNotts (Reclamation) Ltd

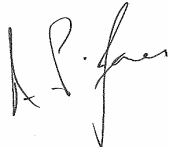

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Glossary

	Definition
°C	Degrees Centigrade
APC	Air Pollution Control
As	Arsenic
BAT	Best Available Technique
BS EN	British Standard - European
CDM	Construction Design Management
CEMs	Continuous Emission Monitoring
CHP	Combined Heat & Power
CFD	Computational Flow Dynamics
Co	Cobalt
CO	Carbon Monoxide
Cr	Chromium
Cu	Copper
CV	Calorific Value
EA	Environment Agency
EfW	Energy from waste
EWC	European Waste Catalogue
FGT	Flue Gas Treatment
HAZOP	Hazardous operations
HCl	Hydrogen Chloride
HWRC	Household Waste Recycling Centre
ID	Induced draught
LOI	Loss Of Ignition
LRHS	London Road Heat Station
Mn	Manganese
NDHS	Nottingham District Heating Scheme
NHIC	Non Hazardous Industrial & Commercial
Ni	Nickel
NOx	Oxides of Nitrogen
OS	Ordnance Survey
Pb	Lead
PPC	Pollution Prevention Control
PPE	Personal Protective Equipment
Sb	Antimony
SNCR	Selective Non Catalytic Reduction
SOx	Oxides of Sulphur
SRCL	Ex White Rose Environmental
TOC	Total Organic Carbon
V	Vanadium
WID	Waste Incineration Directive
WNR	WasteNotts (Reclamation) Ltd
WRG	Waste Recycling Group

Introduction

This report is required to be produced under the Waste Incineration Directive's Article 12(2) requirements on access to information and public participation, which requires the operator to produce an annual report to the Regulator on the functioning and monitoring of the plant and to make this available to the public.

The Nottingham Waste Incinerator installation at Eastcroft comprises the Energy from Waste facility operated by WasteNotts (Reclamation) Limited (WNR) and the clinical waste incinerator operated by SRCL. WNR is owned by Waste Recycling Group (WRG). This report relates only to the Energy from Waste facility.

The Energy from Waste facility is located at

Incinerator Road
Off Cattle Market Road
Nottingham
NG2 3JH

OS Grid Reference: SK45823391

The Energy from Waste facility is part of the Nottingham District Heating Scheme which produces heat and power for local users by burning around 160,000 tonnes of waste from Nottingham, Nottinghamshire and the surrounding area each year. Non hazardous municipal waste, or similar, is brought to the facility after people have sorted out materials for recycling at home and at the Household Waste Recycling Centres.

The Eastcroft Energy from Waste facility generates nearly 20 megawatts of thermal energy in the form of steam, which helps to reduce the need for non-renewable fossil fuels and produces electricity for the local grid and heat for homes in the city centre.

Steam from the facility is sent by pipes to an energy generation facility on London Road. From there it is used for district heating in around 4,600 local homes and converted to electricity for distribution to the grid..

Housing in St Ann's is served by power and heat from the facility, as are the Victoria Shopping Centre, the Nottingham Magistrates Court and the National Ice Centre, amongst others.

Using waste to generate heat and power helps to reduce the need for fossil fuels. A proportion of the waste brought to Eastcroft comes from renewable sources (paper, wood, organic materials, etc.). The Government encourages the use of renewable energy sources as a way of reducing our need for fossil fuels, which are a major cause of climate change.

Waste in Nottingham and the county continues to grow year on year and although improvements are being made in recycling, there is still a vast amount of waste to manage. In 1998/99 the city and county together produced more than 600,000 tonnes of municipal waste and a further 3 million tonnes of waste from businesses. All of this has to go somewhere.

Landfills in the county have been taking the majority of this waste, but they are filling up. Further, there are clear National and European policies to reduce the amount of waste sent to landfill.

One option is to extend capacity at the Energy from Waste facility, so that more waste can be taken to generate useful heat and power and the need for landfill can be reduced.

Waste Recycling Group has resubmitted a planning application for a third line at Eastcroft, capable of managing a further 100,000 tonnes a year of local waste. The application was not determined by Nottingham City Council's Planning Committee within the timeline set by government guidelines. WRG have lodged an appeal against this decision a public enquiry has been held in September 2008 a decision is awaited from the Secretary of State.

Should a member of the public want a copy of this report or wish to make comments then please use the following contact information

Email: info.eastcroft@wrg.co.uk
Web: www.wrg.co.uk/eastcroft
Post Eastcroft EfW Facility
Incinerator Road
off Cattle Market Road
Nottingham
NG2 3JH
Call: 0845 601 5432

Plant Description

The EfW facility currently comprises two incineration streams each capable of burning up to 11.5 tonnes/hour of municipal and light commercial and industrial waste. Approximately 160,000 tonnes of waste is burned in the plant per year at the present time. Waste Recycling Group the owner of WasteNotts (Reclamation) Ltd has proposed to add a third line to the plant. Planning permission was sought and not determined the matter is now subject to an appeal. Should the appeal be successful and the third line built it will be capable of burning up to 13 tonnes/hour of similar waste. The third line will increase the capacity of the incineration process to approximately 260,000 tonnes per year. The third line is included in the scope of the PPC permit (EP3034SN).

The following sections describe the existing operations at Eastcroft EfW. A summary of the proposals for the third line is given at the end of this description.

Raw materials handling

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.

Incineration

Each incinerator stream has a moving grate on which the waste is burned, with 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. 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 acid gas treatment.

Ash handling system

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 a magnetic separator (and are sent for recycling) and the bottom ash is stored in a silo on site. The silo is emptied regularly and the bottom ash is sent for landfill disposal, where it is used beneficially as top cover or as a road building material.

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.

Air pollution control (APC) 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 disposed of to a licensed landfill site.

Stack emission

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.

Outline Description of the Third Line

Engineering details of the proposed third line are not yet available since WRG has not yet awarded the contract for the design and build of the incinerator extension. However it is known that the third line will mainly comprise:

- Waste reception into the existing tipping hall and waste bunkers.
- Two new grab cranes serving the existing incineration lines and the third line.
- A moving grate incinerator and integrated steam raising boiler designed to meet the temperature and residence time requirements of the Waste Incineration Directive. The incinerator plant is likely to be housed in a separate building from the existing lines.
- An ash collection and handling system for incinerator bottom ash with an automatic conveying system to the existing bottom ash silo.
- Abatement of nitrogen oxide emissions in the incinerator combustion chamber by selective non-catalytic reduction and/or flue gas recirculation.
- An air pollution control system similar to that for the existing lines, ie. comprising acid gas neutralisation, carbon injection and dust filtration.
- Emission of the treated flue gases via the currently unused semi-circular flue in the existing stack.
- Continuous and periodic monitoring of all emitted pollutants in the stack.
- An effluent treatment plant for all effluents which cannot be reused within the process, including backflush water from the boiler water treatment plant, overflow from the wet ash handling system and surface water drainage.

- A steam turbine at the Eastcroft site for generation of electricity for sale to the grid, and possible supply of residual heat to the district heating scheme.
- An air cooled condenser to condense the residual steam and return it to the boiler system.

Summary of plant operation

The PPC forms relating to annual data can be found in Appendix 1.

Plant size including number of lines

The Eastcroft Energy from Waste facility is designed around two process streams each with a capacity of 11.5 tonnes per hour with the waste having an average calorific value (CV) of 8.5 MJ/kg. The facility however can easily deal with fluctuations in the composition of the waste and has a design CV range of 6 – 12 MJ/kg which it can accept without any adverse effects.

The theoretical maximum capacity of the plant assuming a 'low' CV waste input and the plant running every hour of the year would be approximately 260,000 tonnes. In reality the plant accepts waste with a CV of around 8.5MJ/kg and has to be shut down for annual maintenance and other works, this results in a historical throughput of around 150 – 160,000 tonnes every year.

Under normal operation the facility does not need supplementary fuel to sustain the combustion process. Additional Fuel is only required for start-up and shut down, to ensure that no waste is burnt at less than 850 °C.

Annual Waste Throughputs

The facility took in approximately 159,000 tonnes of waste in the reporting period. The vast majority of this waste was mixed municipal waste from Nottingham City, Nottinghamshire and the surrounding area. A breakdown of the waste inputs is shown in Figure 1. This identifies how much waste was municipal, non hazardous industrial & commercial and separately collected fractions. The separately collected fraction tends to be waste such as confidential paper from sources such as the police, solicitors etc.

Figure 1: Breakdown by category for waste input

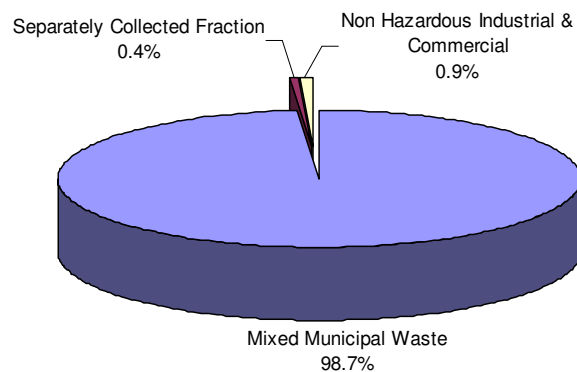
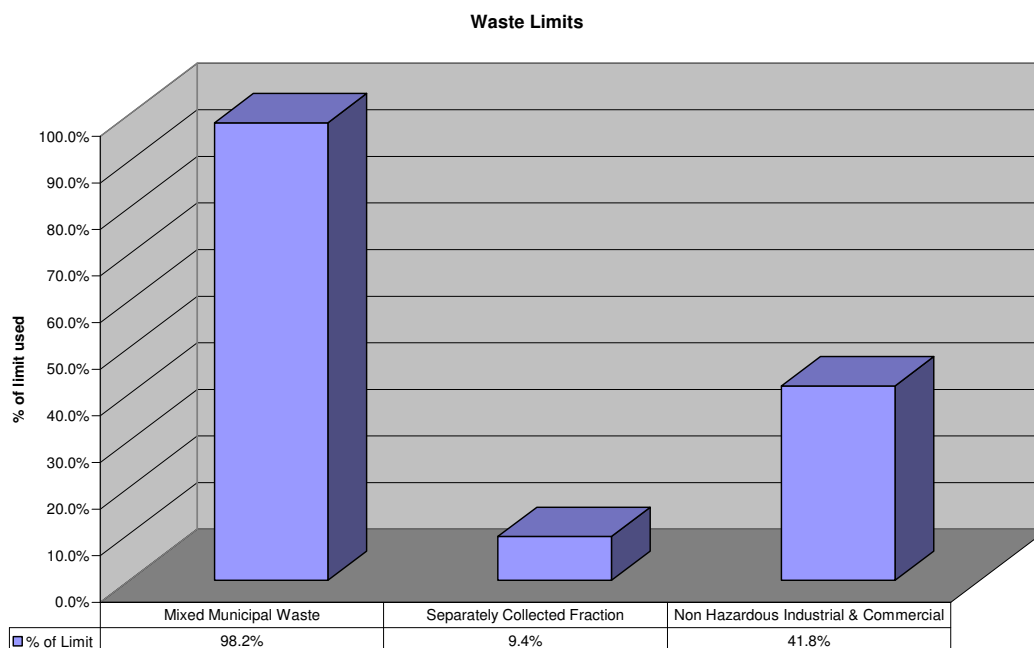


Figure 2: Percentage of waste inputs against the specified limits



As required through the Waste Incineration Directive Article 4(4) the permit identifies the types of waste by European Waste Catalogue (EWC) code and can potentially give maximum quantities of waste which can be accepted at Eastcroft.

The EWC codes have been grouped together into three main headings and maximum quantities assigned. The groupings and quantities are as shown below:

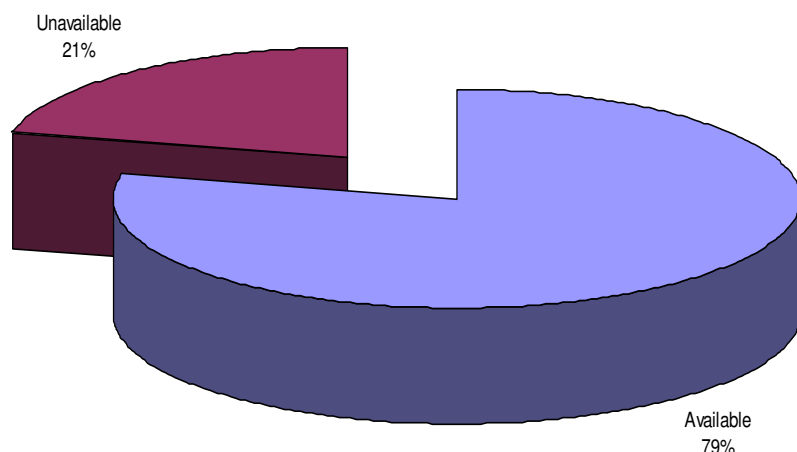
- Municipal Waste
 Limit 160,000 tonnes Actual 157,123 tonnes
- Separately Collected Fraction
 Limit 8,000 tonnes Actual 751 tonnes
- Non Hazardous Industrial & Commercial
 Limit 3,200 tonnes Actual 1,336 tonnes

Figure 2 shows the quantity of waste received against the limit as a percentage. It can be clearly seen from the graph that the Eastcroft facility was within its limits.

Total Plant Operational Hours

The Eastcroft facility is similar to all plants in the fact that it has a computerised maintenance management system. This allows the Operators to schedule in maintenance activities and predict when systems are likely to fail. This coupled with the experience of the Operator maximises the availability of the plant. However it must be recognised that no system is perfect and that the plant will have to come offline either because the repair necessitates it or the works are unforeseen.

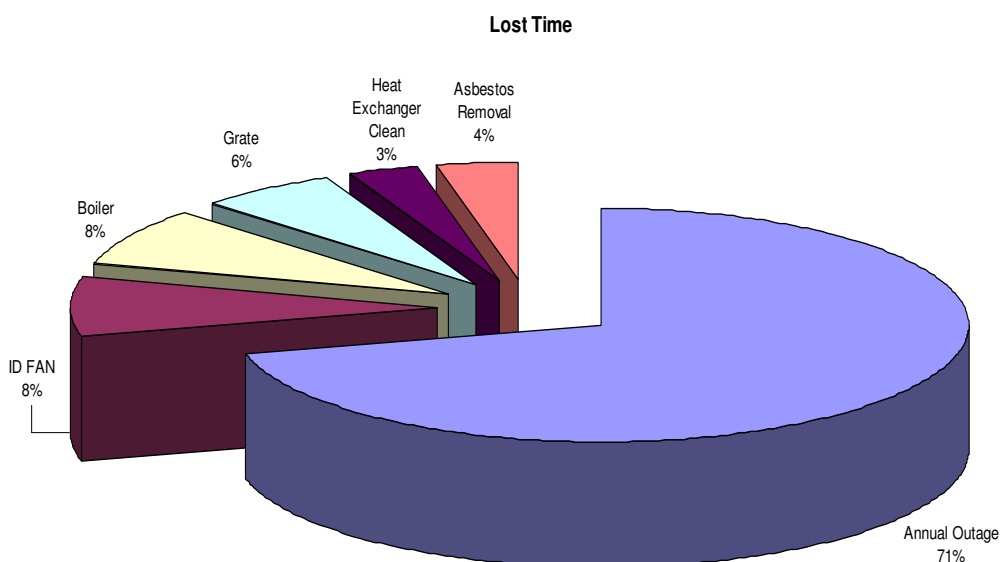
Figure 3: Plant Availability



In total the two lines operated for 13,826 hours giving an overall availability of 79% for the reporting period, as seen in Figure 3.

The analysis of lost time for the plant is broken down into various categories in Figure 4.

Figure 4: Analysis of Lost Time



The biggest lost time element was due to the annual overhaul. This is the planned shutdown period during which maintenance and inspections are carried out. This typically takes place in the summer months when the district heating demand is at its lowest.

The boiler has suffered from some tube failures and these have had to be repaired in a manner that is acceptable to the boiler inspector. Failures take a long time to repair as the unit has to come off line, cooled and the water emptied from the boiler to allow the works to proceed. Once the works have been completed the boiler is filled and a pressure test is carried out. Once this is done the boiler can then be returned to service. The minimum length of time is typically 30 hours although this can easily increase depending on the location of the repair.

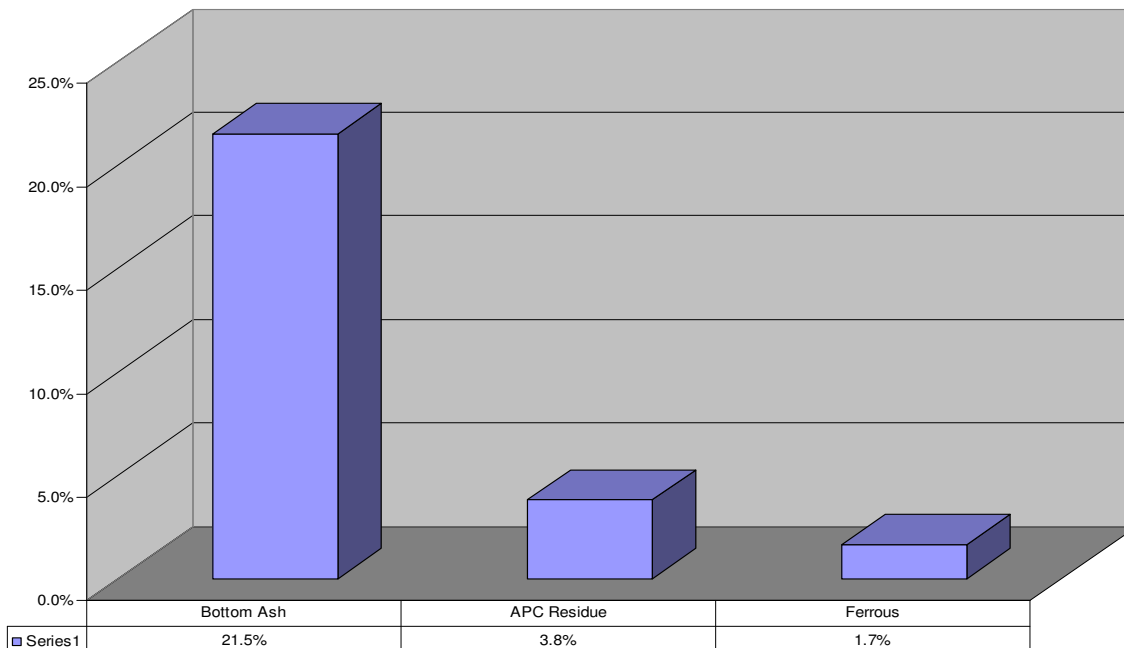
Normal operational difficulties were experienced with the grate such as grate bars lifting. This is caused by waste getting under the moving bars. The result is that the units have to come off and personnel have to get on the grate to reposition the bars. Normally whilst this work is carried out the opportunity is taken to inspect the grate and carry out other maintenance activities.

Towards the end of the reporting period a problem occurred with the Induced Draft Fan on one of the boilers. This necessitated it being shutdown and inspected. Upon inspection it was found that a complete overhaul was necessary, this was completed within 3 weeks (over Christmas) and the fan replaced and returned to service early in the New Year.

The plant has also been affected from other minor issues that have required the units to come off for safety reasons.

Residue production

Figure 5: Quantity of Residue Produced as a % of the input



The plant produces three types of residue;

- Bottom Ash – an inert material left over from the combustion process. This material is currently sent to local landfill sites where it is used as daily top cover and as a road building material. This saves on virgin materials which would otherwise be used.
- Air Pollution Control Residue – A mixture of lime and other particles that have been captured by the Flue Gas Treatment Facility. This material gets sent to a treatment facility where it is mixed with other waste before final disposal in a suitable landfill site
- Ferrous – the ferrous metal in the bottom ash is reclaimed using a magnet. This material is sent away for recycling.

The quantities of residues produced can be seen in Figure 5.

Energy Production

The Eastcroft EfW Facility is part of the Nottingham District Heating Scheme providing energy in the form of steam to the heat station at London Road owned by EnviroEnergy which in turn is wholly owned by Nottingham City Council.

The premises on London Road convert the energy into electricity and hot water. Electricity is supplied to major customers using dedicated cabling. Hot water is distributed to customers over the extensive pipe network that covers much of the city centre. Customers have heat exchangers rather than boilers to keep their building warm and to provide a constant supply of hot water.

EnviroEnergy's customers include the National Ice Arena, the Broadmarsh and Victoria shopping centres, the Inland Revenue offices beside the canal, Capital One's UK headquarters and Nottingham Trent University as well as over 4,600 domestic consumers.

In 2001 EnviroEnergy generated 61,862 mWh of electricity and distributed 177,279 mWh for heat and hot water. Waste produced by 250,000 homes and businesses was used as a fuel to generate this energy. EnviroEnergy have 60 miles of pipes beneath the streets of city centre Nottingham.

If energy were not recovered from Nottingham's waste, fossil fuels would be burnt and more land would be required for landfill sites. By using Nottingham Green Energy our customers are helping to tackle global warming and over time they will also save themselves money.

For the reporting period Eastcroft generated 958 TJ of energy in the form of steam

Summary of plant emissions

The monitoring requirements are set out in Section 2.2 of the permit.

The plant is required to carry out both continuous monitoring as well as extractive tests four times a year however the emissions to be measured do vary. In addition to this the EA carry out a full suite of tests during a year. The EA tests are unannounced i.e. the EA turn up without prior warning.

Pollutants Measured

Pollutants Measured	Continuously	Periodically
Particulates	✓	✓
Oxides of Nitrogen	✓	✓
Sulphur dioxide	✓	✓
Carbon Monoxide	✓	✓
Ammonia	✓	✓
Total Organic carbon	✓	✓
Hydrogen Chloride	✓	✓
Mercury		✓
Cadmium & Thallium		✓
Group III Metals		✓
PCDD & PCDF		✓
Hydrogen Fluoride		✓

Control of emissions

The control of the emissions is explained in the “Plant Description” section although for ease of reference the control measures have been summarised below:

- The acidic gases (Sulphur Dioxide & Hydrogen Chloride) are controlled by the addition of lime to the flue gases.
- Carbon Monoxide and the Total Organic Carbons are controlled through the combustion controls which affect the amount of air in the combustion chamber
- Oxides of Nitrogen are controlled by adding sufficient amounts of ammonium hydroxide solution. The use of computers allows the system to react to the changing parameters within the boiler exactly controlling the levels of NOx and minimising the formation of ammonia.
- The particulates or dust are captured by the bag filters which are highly effective capturing around 99.9% of the particles generated from the process.

Figures 6 & 7 show the maximum daily and half hourly values recorded in the reporting period. Line 1 exceeded the permitted level for 1 30 minute average period in May for Carbon Monoxide where a level of 110 mg/M3 were released against the permit limit of 100 mg/M3.

Line 2 exceeded the permit levels also for Carbon Monoxide on 2 occasions in July where levels of 107mg/M3 and in October where of 122mg/M3 were released.

More detailed graphs showing the plants performance on a month by month basis can be found in Appendix 2.

Figure 6: Line 1 Max Values for Year

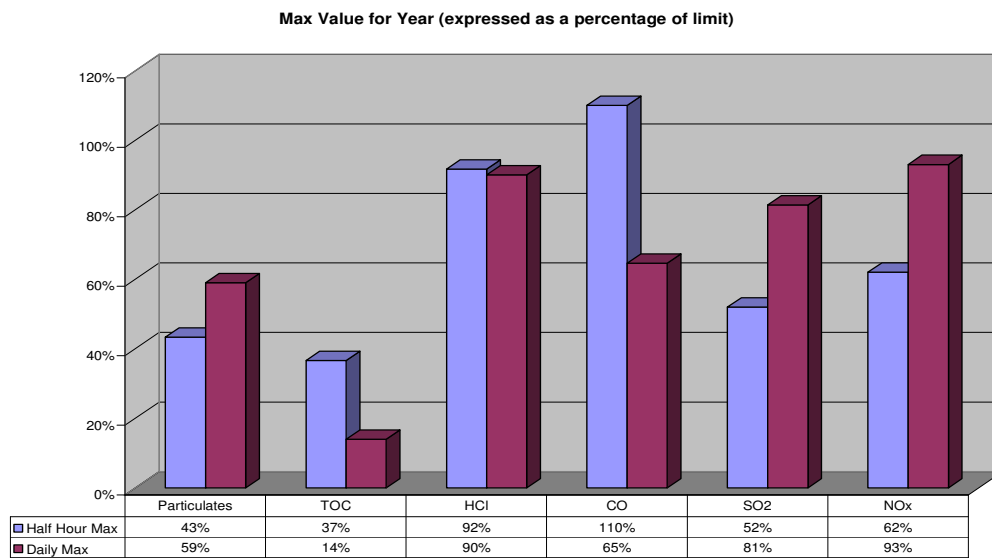
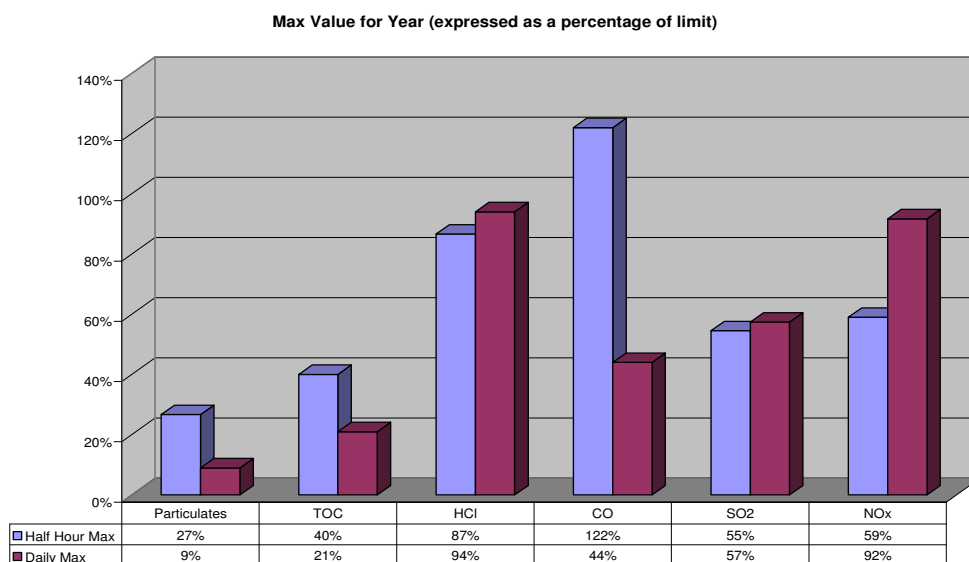


Figure 7: Line 2 Max Values for the Year



Periodical Monitoring (Extractive testing)

Emissions to Air

Within the permit there is an obligation to carry out extractive tests on the substances emitted from the stack. These tests act as a comparison for the CEMs equipment. Some substances are checked bi-annually others are measured quarterly. A UKAS certified company carries out these tests and submits a report to WRG. The results from the tests are included in the quarterly report to the EA.

Figures 8 & 9 show the extractive monitoring results. All of the substances measured are well within the limits set in the permit.

Figure 8: Bi- annual results showing the maximum and average reading from Lines 1 & 2 expressed as an average of the limit

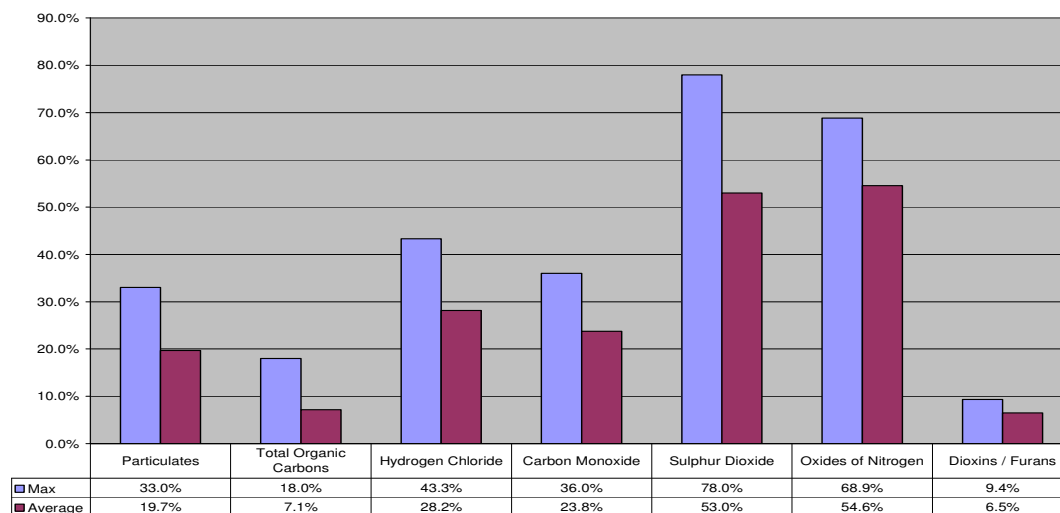
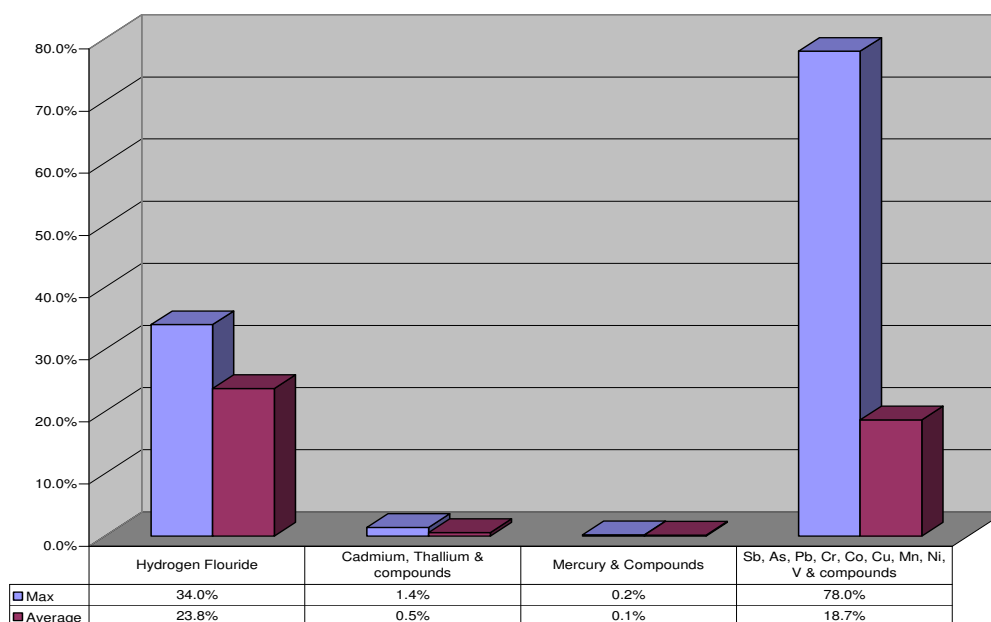


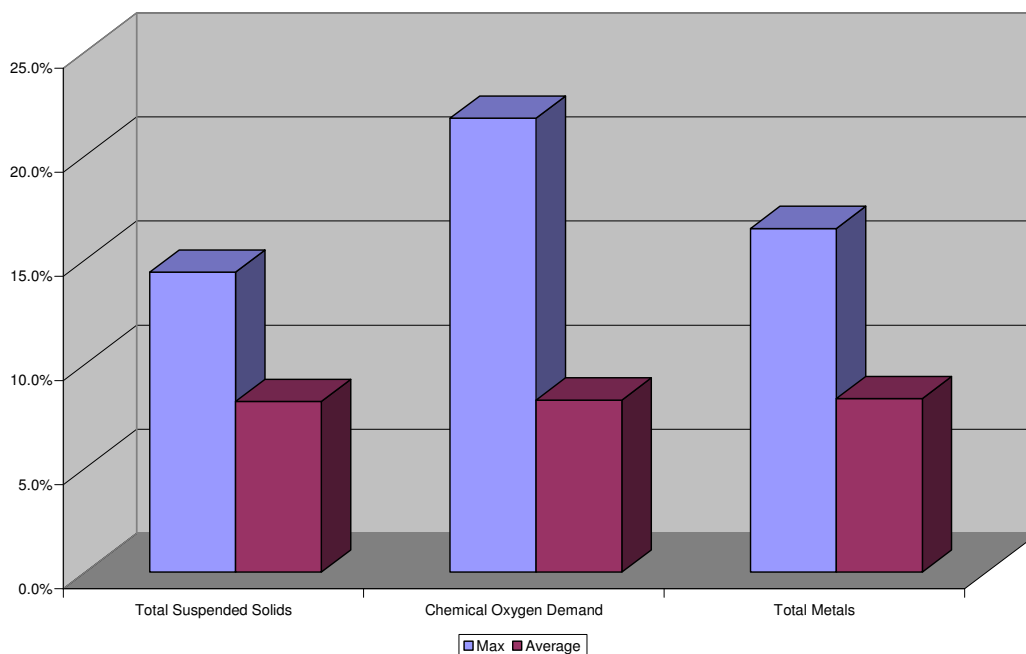
Figure 9: Quarterly extractive Results showing the maximum and average values from Lines 1 & 2 expressed as a % of the limit



Emissions to water

Limits for the emissions to sewer are set in Table 2.2.2.8 of the PPC permit applicable to Eastcroft. These require the substances flowing over the v-notch weir for lines 1 & 2 to be measured quarterly. The method for monitoring is given in the permit.

Figure 10: Emissions to Water



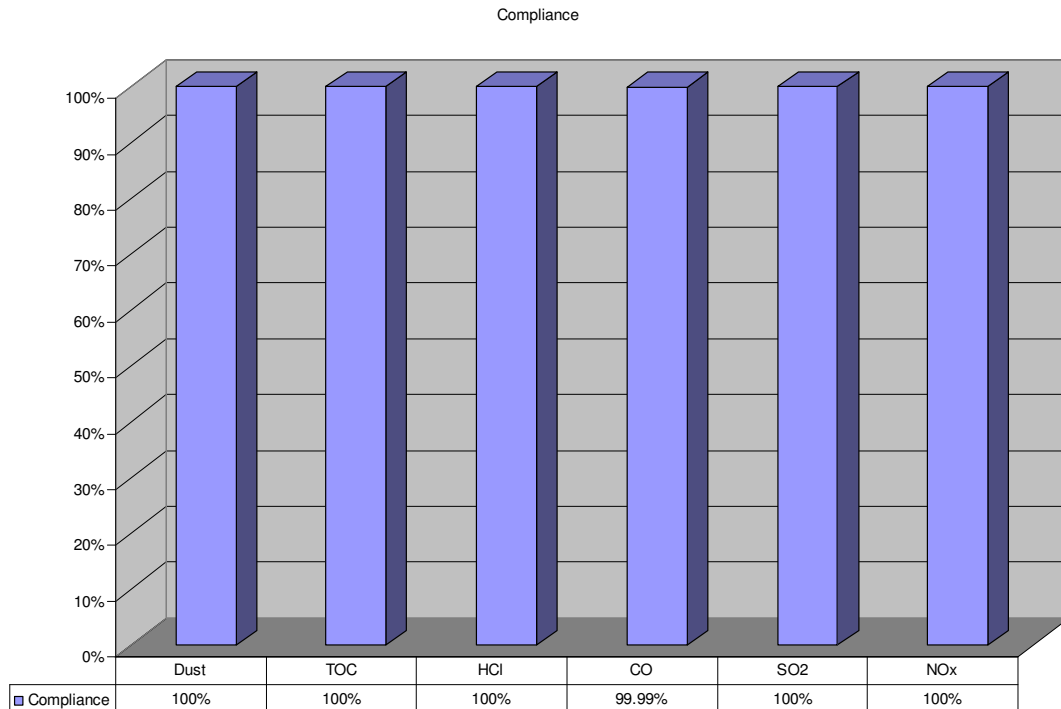
It can clearly be seen in the figure above that the plant remained easily in compliance for all of the quarterly checks.

The pH of the process water going to sewer was between 8.16 and 11.47 averaging at 10.

Summary of plant compliance

Compliance with emissions to air

Figure 11: Compliance with emissions



During the reporting period there were 3 exceedances of the emission limits. All three occurrences were due to substances within the incoming waste, this produced a spike within the 30 minute average period. On each occasion the daily average remained well within its permitted level. In total the 3 exceedances released just over 1 kg of Carbon Monoxide. Weekly checks of the incoming waste are to commence in 2009.

The replacement of boiler tubes is part of the ongoing maintenance plan and boiler panels are in the process of being replaced in a systematic planned way. Three quarters of the original tubes have now been replaced on both boilers. The remaining tubes are planned to be replaced during the extensive works set for 2009.

The tubes are subjected to random thickness tests at least once a year as well as statutory checks by a competent person. However a full survey of the boiler covering the whole tube on every panel cannot be carried out. Whilst these checks are being made if the tubes are found to be thinning they are replaced as a matter of course.

Compliance with Ash Limits.

Quarter 2 bottom ash samples recorded a Total Organic Carbon (TOC) and Loss Of Ignition (LOI) above the permitted levels. This was caused by the requirement to use gas oil to retain temperatures above the WID requirement

of 850°C at a period when LRHS did not have sufficient demand for the steam produced. This affects the furnace combustion conditions and reduce the “burn out” of bottom ash.

Formal Enforcement Notices

WNR received 1 enforcement notices on the 15th May following operation of the Bag Filter by-pass on the 19th April. The by-pass also operated in February of the reporting year.

Summary of plant improvements

Improvement Conditions

Within the PPC permit applicable to the EfW facility, the EA set out ten improvement conditions in Table 1.4.1. WRG has not been required to submit responses to any improvement conditions during this reporting period.

Review of potential for CHP Line 3

(Table 1.4.1 Reference 9 Submission by 28/12/06)

WRG are actively discussing with EnviroEnergy the possibility of using the steam generated from Line 3 on the existing District Heating System. There are many benefits in utilising the steam in this way such as improved efficiencies. Although discussions continue no further work can be undertaken until such time that planning is approved.

The original planning application made by WRG was rejected in September 2006, however WRG have appealed this decision and a Public Enquiry was held in September 2008 the result is awaited from the Secretary of State having been called in by her department.

Verification of combustion conditions for Line 3

(Table 1.4.1 Reference 10 Submission by 3 months after Takeover of L3)

No work can be done on this until Line 3 is under construction.

Other Plant Improvements

Lime Trials: Eastcroft is continuing to trial different types of lime used in the flue gas treatment process. At the start of the reporting period Limbux Lime, produced by Buxton Lime, was predominately used. However it has come to WRGs attention that there are alternative products on the market. An initial test has been carried out with one material and it is hoped to trial other alternatives in 2007. The initial test did show a small decrease in material used but a full analysis still has to be completed.

Tanker Out Loading: WRG have sought and received permission to install equipment to allow APC Residues to be removed from site using tankers. The APC residues are now being sent directly to a tanker without the need to mix the APC residue with water on site. The benefits of this system are:

- Number of vehicle movements reduced as the tankers have a greater capacity than the containers.
- Less waste is produced as addition of water will be eliminated.
- The overall operation is cleaner and power consumption will be reduced as no mixing is required on site.
- All the equipment is contained within a purpose built building thus eliminating the risk of an environmental incident during out loading.

Boiler & Grate Refurbishment Project.

WRG has over the course of the last 4 years progressively replaced key tube sections in each of the Boilers. During 2008 WRG signed a contract with the original Grate & Boiler manufacturer to replace the remaining sections of Boiler tube and the Grate system. During this replacement process a small number of changes will be made to the system for example a modified Feed Chute with water cooling, ultrasonic level device Chute blockage clearing system and improved Shut-Off damper will be incorporated; the Grate will have improved control by way of a fully integrated Distributed Control System (DCS) each of the two grate sections and feed rams can be controlled independently; the primary system which provides the air underneath the grate will be split into 2 group of 5 sections all independently controllable this air will also be able to be preheated to 160°C. a new Ash Discharger complete with gate seal valve will be incorporated into the ash transport system thus enabling a safer system to be used when any blockages occur in the system. Finally there will be two cameras fitted in the furnace one looking up the grate to enable operators to visually monitor the combustion conditions and a Infrared Camera which can be incorporated into the combustion control system to fine tune/optimise the "flame front" to ensure high burn-out efficiency and thus reducing LOI/TOC in the Bottom Ash.

Additional Magnet.

During 2008 an additional magnet has been installed within the ash handling plant to increase the recovery of steel from bottom ash an estimated 20% more ferrous has been recovered for recycling due to the modification.

Summary of information made available

General information about Waste Recycling Group and the Eastcroft Energy from Waste Facility can be found at www.wrg.co.uk and www.wrg.co.uk/eastcroft , alternatively written enquiries can be sent to the following address:

Eastcroft Energy from Waste Facility
Incinerator Road
Off Cattle Market Road
Nottingham
NG2 3JH

For telephone enquiries please phone 0845 601 5432 quoting Eastcroft as a reference.

Information held on the public register can be found at:

Environment Agency Trentside Scarrington Road West Bridgford Nottingham NG2 5FA Tel: 0115 846 3608	City of Nottingham City Development Lawrence House Talbot Street Nottingham NG1 5NT Tel: 0115 915 6410
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In both cases members of the public are advised to phone to arrange a viewing. This is to allow the sites time to make the information requested more accessible. This information can be viewed during normal working hours e.g. 09:00 to 17:00.

- The Nottingham Waste Installation will re-initiate an active liaison group in 2009 involving a range of representatives from the local community and other interested parties

The liaison group will meet once a quarter to discuss the performance of the installation and future activities. For further information please contact:

Alan Jones
Secretary, Eastcroft Liaison Group
Eastcroft Energy from Waste Facility
Incinerator Road
Off Cattle Market Road
Nottingham
NG2 3JH

Tel: 0115 986 9505
Fax: 0115 986 5129
Email: Alan.jones@wrg.co.uk

Appendix 1

Permit Reference Number : EP3034SN

Operator : WasteNotts (Reclamation) Limited

Reporting of Waste Disposal and Recovery for the year 2008

Waste Description	Disposal Route	Tonnes	Recovery Tonnes
1) Hazardous Wastes			
APC Residue	Landfill	6031	0
Other hazardous wastes			
Total hazardous waste		6031	0
2) Non-Hazardous Wastes			
Bottom Ash	Landfill	34,209	34,209
Ferrous Material.	Recycling	2,629	2,629
Total non-hazardous waste		36,838	36,838
TOTAL WASTE	-	42,870	36,838

Trends in Waste Disposal and Recovery			
Year	Parameter	Total Waste	Waste per unit output
2006	Bottom Ash	32,198	0.21
	APC Residue	7674	0.05
	Ferrous Material	3013	0.02
2007	Bottom Ash	33,852	0.22
	APC Residue	6529	0.04
	Ferrous Material	2395	0.02
2008	Bottom Ash	34,209	0.215
	APC Residue	6031	0.038
	Ferrous Material	2,629	0.0165

Operator's comments :

Permit Reference Number : EP3034SN

Operator : WasteNotts (Reclamation) Limited

Installation : Nottingham Waste Incinerator

Form Number : Agency Form / EP3034SN / WU1/ Form Dated 22/12/05

Reporting of Water Usage for the year 2008

Water Source	Usage (m3)	Specific Usage (m3/t)
Mains water	4363	0.0274

Trends in Water Usage		
Year	Parameter	
	Named Water source	Water per unit output
2006	Mains Water	0.0582
2007	Mains Water	0.0531

Operator's comments :

Permit Reference Number : EP3034SN
Installation : Nottingham Waste Incinerator

Operator : WasteNotts (Reclamation) Limited
Form Number : Agency Form / EP3034SN / E / Form Dated 22/12/05

Reporting of Energy Usage for the year 2008

Energy Source	Energy Usage		CO ₂ Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity imported from London Road Heat Station*	MWh	9861	0 ¹
Electricity imported from national grid*	MWh	N/A	N/A ²
Gas Oil	Tonnes	782	782

Trends in Energy Usage			
Year	Parameter		
	Primary Energy usage	CO ₂ produced	CO ₂ per unit output
2006			
Electricity imported from London Road Heat Station ¹	9,692	0 ¹	
Electricity imported from national grid ²	N/A	N/A ²	
Gas Oil	389	389	
2007			
Electricity imported from London Road Heat Station*	9661	0 ¹	
Electricity imported from national grid*	N/A	N/A ²	
Gas Oil	582	582	

* Conversion factor for delivered electricity to primary energy =

Operator's comments :

¹The Electricity imported from London Road is generated from the steam sent by Eastcroft. The CO₂ produced is assumed to be zero as it is the process at Eastcroft that produces CO₂ rather than the activities at London Road. Eastcroft produces approximately 0.39 tonne of CO₂ for every MW hour of steam.

² Eastcroft Does not have a direct connection to the grid.

Reporting of Performance Indicators for the period 2008

Annual Production/Treatment		
Total Municipal Waste Incinerated (including separately collected fractions)	Tonnes	157,123
Total Commercial/Industrial Waste Incinerated	Tonnes	1,336
Steam exported (as measured at London Road Heat Station)	terajoules	958
Hot water exported (as measured at London Road Heat Station)	MWh	34,256
Electrical energy used on installation (MWI and CWI)	KWhrs	9,861,760
Gas oil used	Tonnes	782

Environmental Performance Indicators

Parameter	Quarterly Average	Units
Electrical Energy imported to site	62	KWHrs/t waste
Fuel oil consumption	4.91	Kg/t waste
Mass of bottom ash produced	214	Kg/t waste
Mass of APC residues produced	37.9	Kg/t waste
Mass of ammonia used	1.88	Kg/t waste
Mass of carbon used	0.65	Kg/t waste
Mass of lime used	7.4	Kg/t waste
Water consumption	0.027	M3/t waste

Trends in Environmental Performance			
Year	2006	2007	
Parameter	Quarterly Average	Quarterly Average	Units
Electrical Energy imported to site	62	63	KWHrs/t waste
Fuel oil consumption	3.76	2.53	Kg/t waste
Mass of bottom ash produced	218	210	Kg/t waste
Mass of APC residues produced	42	50	Kg/t waste
Mass of ammonia used	1.61	1.95	Kg/t waste
Mass of carbon used	0.25	.22	Kg/t waste
Mass of lime used	8.31	8.75	Kg/t waste
Water consumption	0.05	0.06	m3/t waste

Operator's comments :

Appendix 2

