

**Integra North Energy Recovery Facility
 EPR BJ7786IV
 Annual Performance Report 2012**

1.0 INTRODUCTION

This document represents the Annual Performance Report for Integra North Energy Recovery Facility (Chineham ERF) and has been written to conform with Article 12 (2) of the Waste Incineration Directive (WID):

'For incineration or co-incineration plants with a nominal capacity of two tonnes or more per hour and notwithstanding Article 15(2) of Directive 96/61/EC, an annual report to be provided by the operator to the competent authority on the functioning and monitoring of the plant shall be made available to the public. This report shall, as a minimum requirement, give an account of the running of the process and the emissions into air and water compared with the emission standards in this Directive.'

This report has also been written in order to comply with Condition 4.1.2 of Environmental Permit BJ7786IV:

'A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31st January (or other date agreed in writing by the Agency) each year.'

2.0 FACILITY INFORMATION

Plant Operator	Veolia Environmental Services Hampshire Limited
Name of Facility	Integra North Energy Recovery Facility
EPR Permit Number	BJ7786IV
Facility Address	Whitmarsh Lane Reading Road Chineham Basingstoke Hampshire RG23 8LL
Telephone Number	01256 317000
Fax Number	01256 317101

Integra North Energy Recovery Facility (Chineham ERF) is the first of its kind to be built in Hampshire and is a leading example of best environmental practise for waste treatment. The waste produced by residents of the North Hampshire Districts is dealt with at this ERF, providing a long term, sustainable solution for waste disposal. It recovers heat energy from the waste to produce steam, which is used to generate electricity supplied to the National Grid. Strict environmental controls and proven operating

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experience ensure the Integra North ERF is a centre of excellence and a benchmark for the industry.

2.1 Technical details of the plant:

- Maximum Permitted Refuse throughput – 102,000 tonnes per annum, with approximately 11 tonnes per hour burning capacity
- Storage capacity – four days full plant capacity
- Number of tipping bays – 5
- Steam output – 38 tonnes of steam per hour at 400°C and 45 BAR
- Flue gas treatment – CNIM semi-dry lime scrubber followed by high performance bag filters, discharging into a 65 metre high chimney
- Energy produced – maximum generating capacity 8MW

The Integra North ERF forms part of Veolia’s Integrated Contracts, the most progressive integrated waste management system in Britain which provides sustainable waste management for all the domestic waste in the county.

The ERF is regulated by the Environment Agency and is certified in compliance with:

- ISO 9001 : 2008
- ISO 14001 : 2004, and
- OHAS 18001 : 2007

Table 2.1: Permitted Waste Types

Waste Code	Description
19 02 10	Combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 12 01	Paper and cardboard
19 12 08	Textiles
19 12 10	Combustible waste (refuse derived fuel)
19 12 12	Other wastes from the mechanical treatment of wastes
20 01 01	Paper and cardboard
20 01 08	Biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 39	Plastics
20 01 99	Other fractions not otherwise specified (Hygiene waste collected from domestic facilities that is not classified as clinical waste)
20 02 01	Garden and park wastes (including cemetery waste)

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20 02 01	Biodegradable waste
20 03 01	Mixed municipal waste
20 03 02	Market waste
20 03 03	Street cleaning residues
20 03 07	Bulky waste

3.0 OPERATIONAL INFORMATION

Table 2.2 : Operational Details

Operational hours	8164	Hours
Total Waste Incinerated	99,127	Tonnes
Electricity Exports to National Grid	49,564	MWHrs
Metals Recovered	1784	Tonnes
Incinerator Bottom Ash Produced	21,312	Tonnes
APC Residues	3172	Tonnes

3.1 Solid Residue Outputs

The Incinerator Bottom Ash (IBA) is transported by Veolia Haulage to Raymond Brown Minerals and Recycling Ltd Aggregate Processing Facility situated in Verwood, Hampshire. The IBA is reprocessed into a number of different graded aggregates, ferrous and non ferrous metal products, which are then utilised in the construction and metal industry.

Ferrous metals removed during on site processing of IBA are forwarded to M.J.D Light Brothers Waste and Metal Recycling Facility situated in Lewes, East Sussex. The metals are separated into individual fractions, and are sent on for utilisation in the metal industry.

The fine particulate matter, known as Air Pollution Control Residue (APCr), is removed from the process by a fabric filter. The APCr is sent to Empire, another Veolia site located in Aldridge, West Midlands where it is used to neutralise spent acid wastes before final disposal.

In line with Veolia's corporate responsibility, and as a Permit requirement, a Duty of Care Audit is conducted at least annually at the above mentioned locations.

3.2 Water Discharges from Site

The water required for plant operations is reused extensively within the process and therefore few, or no water discharges are released from the facility. When required, water discharges are released in batches from the plant in accordance with the permit. Samples are taken and analysed for the parameters listed

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in the Trade Effluent Discharge Consent issued and regulated by Thames Water.

The results compared with permitted emission limits are summarised in Table 3.2.1

Table 3.2.1: Releases to Sewer				
Date	Parameter			
	Cadmium ug/l	Limit ug/l	Mercury ug/l	Limit ug/l
13.03.2012	<0.0015	30	0.00002	50
14.03.2012	<0.0015	30	0.000019	50
14.04.2012	<0.0015	30	<0.000002	50
15.04.2012 (Day)	<0.0015	30	<0.000002	50
15.04.2012 (Night)	<0.0015	30	<0.000002	50
20.04.2012	<0.0015	30	<0.000002	50
23.04.2012	<0.0015	30	0.000006	50
24.04.2012	<0.0015	30	0.000005	50

3.3 Flue Gasses

All gaseous emissions generated during the combustion process pass through an extensive flue gas cleaning process which starts with a gas scrubber where hydrated lime is injected to neutralise acid gasses. Activated carbon is added to remove dioxins, urea is added to treat oxides of nitrogen and finally the bag filter takes away remaining particulates. The cleaned gasses are finally released into the atmosphere through the chimney.

In compliance with the WID and EPR Permit, the flue gasses are continuously monitored using MCERTS accredited equipment. In addition to the continuous monitoring, an extractive sampling campaign is undertaken on a quarterly basis by an approved service supplier. The organisation used for analysis and monitoring are accredited by the United Kingdom Accreditation Service (UKAS) and the Environment Agency's Monitoring Certification Scheme (Mcerts).

3.3.1 Extractive Monitoring

The parameters measured and their frequency of monitoring are summarised in Table 3.3.1

Table 3.3.1 : Measured Emissions					
Parameter	Frequency				
	Continuous	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Particulate Matter	✓		✓		✓
TOC	✓		✓		✓
Hydrogen Chloride	✓		✓		✓
Oxides of Nitrogen	✓		✓		✓

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Carbon Monoxide	✓		✓		✓
Sulphur Dioxides	✓		✓		✓
Ammonia	✓		✓		✓
Nitrous Oxide			✓		✓
Hydrogen Fluoride		✓	✓	✓	✓
Mercury		✓	✓	✓	✓
Arsenic		✓	✓	✓	✓
Cadmium		✓	✓	✓	✓
Chromium		✓	✓	✓	✓
Copper		✓	✓	✓	✓
Cobalt		✓	✓	✓	✓
Nickel		✓	✓	✓	✓
Manganese		✓	✓	✓	✓
Antimony		✓	✓	✓	✓
Lead		✓	✓	✓	✓
Thallium		✓	✓	✓	✓
Vanadium		✓	✓	✓	✓
Dioxins and Furans			✓		✓
Dioxin-like PCBs			✓		✓
PAHs			✓		✓

The results of the quarterly extractive campaign in comparison to WID and Permitted limits are summarised in Tables 3.3.2 through to and including Table 3.3.5

Table 3.3.2 : Quarter 1 Extractive Results

Parameter	Result mg/m ³	Emission Limit mg/m ³
	Stream 1	
Mercury and its compounds	0.004	0.05
As, Sb, Pb, Cr, Cu, Mn, Ni, V and their compounds	0.044	0.5
Cadmium, Thallium and their compounds	Non Detectable	0.05

Table 3.3.3 : Quarter 2 Extractive Results

Parameter	Result mg/m ³	Emission Limit mg/m ³
	Stream 1	
TOC	0.47	20
Oxides of Nitrogen	150	400
Carbon Monoxide	9.37	100
Ammonia	4.04	No Limit Applies

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Nitrous Oxide	11.5	No Limit Applies
Hydrogen Fluoride	0.48	1
Mercury and its compounds	Non Detectable	0.05
As, Sb, Pb, Cr, Cu, Mn, Ni, V and their compounds	<0.016	0.5
Cadmium, Thallium and their compounds	Non Detectable	0.05
Dioxins and Furans (I -TEQ)	0.004	0.1
Dioxins and Furans (WHO – TEQ Humans and Mammals)	0.003	0.1
Dioxins and Furans (WHO – TEQ Fish)	0.004	0.1
Dioxins and Furans (WHO – TEQ Birds)	0.005	0.1
Dioxin-like PCBs (WHO – TEQ Humans and Mammals)	Non Detectable	No Limit Applies
Dioxin-like PCBs (WHO – TEQ Fish)	Non Detectable	No Limit Applies
Dioxin-like PCBs (WHO – TEQ Birds)	Non Detectable	No Limit Applies
PAHs Total	0.321	No Limit Applies

Table 3.3.4 : Quarter 3 Extractive Results

Parameter	Result mg/m ³	Emission Limit mg/m ³
	Stream 1	
Mercury and its compounds	0.002	0.05
As, Sb, Pb, Cr, Cu, Mn, Ni, V and their compounds	0.004	0.5
Cadmium, Thallium and their compounds	Non Detectable	0.05

Table 3.3.5 : Quarter 4 Extractive Results

Parameter	Result mg/m ³	Emission Limit mg/m ³
	Stream 1	
TOC	0.04	20
Oxides of Nitrogen	184.9	400
Carbon Monoxide	7.82	100
Ammonia	2.86	No Limit Applies
Nitrous Oxide	19.9	No Limit Applies
Hydrogen Fluoride	0.29	1
Mercury and its compounds	Non Detectable	0.05
As, Sb, Pb, Cr, Cu, Mn, Ni, V	0.075	0.5

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and their compounds		
Cadmium, Thallium and their compounds	Non Detectable	0.05
Dioxins and Furans (I -TEQ)	0.006	0.1
Dioxins and Furans (WHO – TEQ Humans and Mammals)	0.006	0.1
Dioxins and Furans (WHO – TEQ Fish)	0.006	0.1
Dioxins and Furans (WHO – TEQ Birds)	0.009	0.1
Dioxin-like PCBs (WHO – TEQ Humans and Mammals)	Non Detectable	No Limit Applies
Dioxin-like PCBs (WHO – TEQ Fish)	Non Detectable	No Limit Applies
Dioxin-like PCBs (WHO – TEQ Birds)	Non Detectable	No Limit Applies
PAHs Total	0.663	No Limit Applies

3.3.2 Continuous Monitoring

The Continuous Monitoring Equipment (CEMS) for the period of 1st January 2012 through to 31st December 2012 was in service for 100% of the WID operational hours. The equipment is meticulously serviced, maintained, and calibration checks are routinely conducted.

The maximum half hourly average, and daily averages are reported to the Environment Agency on a bi-annual basis. The data is also uploaded on to the companies' website on a monthly basis and can be viewed at: www.veoliaenvironmentalservices.co.uk

3.3.3 Annual Emissions

The annual mass emissions of the periodically monitored parameters are summarised in Table 3.3.6

Table 3.3.6 : Annual Mass Emissions		
Parameter	Units	Annual Total Kg
Hydrogen Fluoride	Kg	325
Mercury	Kg	0.32
Arsenic	Kg	0.65
Cadmium	Kg	0.08
Copper	Kg	0.80
Nickel	Kg	2.4
Manganese	Kg	2.67
Antimony	Kg	0.41

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Lead	Kg	1.36
Thallium	Kg	0
Dioxins and Furans	Kg	0.000003643
PAHs	Kg	0.340
PCBs	Kg	0.000001301

3.0 ENVIRONMENTAL CONTROLS

The management and staff of Integra North ERF are among the most highly qualified and experienced in the sector. Reliable environmental controls and a robust management system ensure that compliance with the Waste Incineration Directive and EPR Permit is achieved.

VES Staff are aware of the environmental impacts of their work and exercise an appropriate standard of good house keeping, proportionate to the impacts of any potential emissions. Training and competency of staff is controlled by the VES Business Management System. The Management System covers training, awareness and competence. The company identifies training requirements of its employees and provides suitable resources to ensure they have the required knowledge, skills and expertise to carry out their duties.

Table 4.1 : Facility Compliance Summary

Exceedence of Permitted Limits	None
Abnormal Operations	None
Enforcement Notices	None
Complaints	No substantiated complaints