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**The Environmental Permitting (England  
and Wales) Regulations 2010**

**Permit EPR/RP3638CG  
Runcorn Energy from Waste Facility**

**Annual Performance Report 2016**

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## Quality Assurance

This report has been prepared with all reasonable skill, care and diligence. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

### **Report Details**

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## **1. Introduction**

Runcorn Energy from Waste (EfW) facility is located to the North of the Runcorn site known as Weston Point. The EfW facility has a total capacity of approximately 350MW (thermal input) and is capable of generating up to approximately 86MW of electrical power and 110 tonnes per hour steam. The plant comprises of two parts: Phase 1 and Phase 2. Phase 1 consists of two lines 1 and 2 and has a capacity of 425,000 tonnes per year. Phase 2 consists of two further lines; 3 and 4 and doubles the capacity of the facility.

In accordance with the requirements of Condition 4.2.2 and Schedule 4 of Permit EPR/RP3638CG issued by the Environment Agency to Viridor Waste Management Limited (Viridor) on 29<sup>th</sup> March 2012, Viridor is required to produce an annual performance report which is to be submitted to the Environment Agency by the 31<sup>st</sup> March of each year as agreed in writing with the Environment Agency.

This report summarises the environmental and performance data collected at the site during 2016 and fulfils the requirement of Article 12(2) of the Waste Incineration Directive.

The report will cover the following areas of environmental and performance monitoring:

- Section 2 – Point Source Emissions to Air
- Section 3 – Point Source Emissions to Water
- Section 4 – Residue Quality Monitoring Requirements
- Section 5 – Performance Parameters
- Section 6 – Periods of WID abnormal operation

## **2. Point Source Emissions to Air**

### **2.1. Introduction**

Permit Condition 3.5.1(a) and Tables S3.1 and S3.1(a) require Viridor to undertake performance monitoring of the point source emissions to air arising at sample points A1 (Line 1), A2 (Line 2), A3 (Line 3), and A4 (Line 4).

The date of first waste burn for each line is as follows:

- Line 1 – 7<sup>th</sup> March 2014
- Line 2 – 18<sup>th</sup> March 2014
- Line 3 – 19<sup>th</sup> December 2014
- Line 4 – 8<sup>th</sup> January 2015

A summary of the point source emissions to air monitoring data at sample point A1 and A2 for the period is included as Table 1. Point source emissions to air monitoring data at sample point A3 and A4 is included as Table 2.

### **2.2 Commentary on Data**

The recorded concentrations generally remained compliant with the limits set out in Permit Tables S3.1 and S3.1(a) during the review period.

Note 1: Following an outage waste was introduced to line 1 there were 2 x 10 minute CO exceedances at emission point A1. The facility may disregard 5% of all 10 minute CO periods in a 24 period. However there had only been 36 valid 10 minute periods which only allowed us to discount 1.8 readings.

Note 2: On the start-up of line 1 there were 2 x 1/2 hourly exceedances on Hcl at emission point A1. This was due to ID fan not responding. This was the result of a DCS upgrade which reset the fans control parameters to an earlier set point.

Note 3: Emissions point A3 there were exceedances on Hcl in 2 x 1/2 hourly periods. This is due to a suspected calibration gas contamination in the on line analyser which occurred during a weekly QAL3 check.

Note 4: Emission point A4 there were exceedances on Hcl in 3 x 1/2 hourly periods. There were also exceedances on SO<sub>2</sub> in 2 x 1/2 hourly periods. This is due to a suspected calibration gas contamination in the on line analyser which occurred during a weekly QAL3 check.

Note 5: The max CO 10 minute average recorded for emission points A2, A3 and A4 were compliant with the criteria set out in the Industrial Emissions Directive

Note 6: SO<sub>2</sub> breach on emission point A2. This was due to a fault on multi component analyser, responsible for lime dosing into Flue Gas Treatment

Note 7: SO<sub>2</sub> breach emission point A3, caused by variability of waste input. Lime dosing was increased at the time to lower the level of SO<sub>2</sub>

Note 8: SO<sub>2</sub> breach emission point A1, 30 minute breach due to variability in waste input an elevated

Note 9: The elevated 30 minute period TOC at emission point A4. This elevation occurred on 3rd May. The cause for this was the flow meter to the primary air fans had gone into a fault condition and resulted in a minimum airflow rate being requested by the air fans and caused an imbalance in the fuel air mixture.

Note 10: SO<sub>2</sub> breach at emission points A3 and A4, the cause for this was due to a variability of waste input which resulted in a high pressure trip when both lines required excess lime dosing.

Note 11: HCl breach at emission point A2. The elevation was due to working on the raw gas analysers and causing a fault condition reading of zero. This indicated to the lime dosing system that the HCl was under control, causing the dosing to reduce to a minimum amount. This resulted in a high HCL for that 30 minute period.

Note 12: The elevated max Hcl 30 minute average concentration on A4 was due to a discrepancy between the field instruments and the control room feedback resulting in a miscalculated lime dosing rate.

Note 13: The elevated max SO<sub>2</sub> 30 minute average concentration on A4 was due to excess plastic being fed into the furnace.

## **2.3 Schedule Notices Issued**

Note 1: Schedule Notification number (20160803)

Line 3 3<sup>rd</sup> August at 19:00.High SO<sub>2</sub> level of 231.5mg/m<sup>3</sup>. Breach detected on the 24<sup>th</sup> October at 14:00 and schedule notification issued on the 25<sup>th</sup> October. Breach was linked to a waste stream issue, and a delayed increase in lime dosing. The delay in reporting was due to a monitoring system upgrade.

**Table 1: Emissions to Air from A1 and A2**

Releases to Air from Incinerators							
Parameter	Reference period	Monitoring frequency	Limit	A1		A2	
				Max	Avg	Max	Avg
Particulates	½ hr average	Continuous	30 mg/m <sup>3</sup>	5.24	0.16	0.71	0.13
	Daily average	Continuous	10 mg/m <sup>3</sup>	0.34	0.16	0.24	0.13
TOCs (as C)	½ hr average	Continuous	20 mg/m <sup>3</sup>	5.11	0.1	1.50	0.07
	Daily average	Continuous	10 mg/m <sup>3</sup>	0.43	0.1	0.27	0.07
Hydrogen chloride	½ hr average	Continuous	60 mg/m <sup>3</sup>	94.66	1.40	64.75	0.73
	Daily average	Continuous	10 mg/m <sup>3</sup>	6.85	1.38	5.12	0.72
Carbon monoxide	10 min average	Continuous	150 mg/m <sup>3</sup>	863.39	4.01	270.99	3.86
	Daily average	Continuous	50 mg/m <sup>3</sup>	31.70	3.90	45.25	3.82
Sulphur dioxide	½ hr average	Continuous	200 mg/m <sup>3</sup>	207.58	20.00	247.66	25.39
	Daily average	Continuous	50 mg/m <sup>3</sup>	37.89	19.99	45.67	25.33
Oxides of nitrogen	½ hr average	Continuous	400 mg/m <sup>3</sup>	295.93	159.32	335.84	158.07
	Daily average	Continuous	200 mg/m <sup>3</sup>	192.77	159.39	195.25	158.01
Nitrous oxide (N <sub>2</sub> O)	Daily average (units: mg/m <sup>3</sup> )	Continuous	N/A	5.82	2.95	6.79	4.44
Ammonia	Daily average (units: mg/m <sup>3</sup> )	Continuous	N/A	1.11	0.23	3.06	0.21
Hydrogen fluoride	1 hour period	Spot	2 mg/m <sup>3</sup>	0.1	0.1	0.31	0.31
Cd + Tl	½ – 8 hour	Spot	0.05 mg/m <sup>3</sup>	0.004	0.004	0.003667	0.003667
Hg	½ – 8 hour	Spot	0.05 mg/m <sup>3</sup>	0.005	0.005	0.003675	0.003675
Sb+As+Pb+ Cr+Co+Cu+ Mn+Ni+V	½ – 8 hour	Spot	0.5 mg/m <sup>3</sup>	0.085	0.085	0.13	0.13
Dioxins and Furans (I-TEQ)	½ – 8 hour	Spot	0.1 ng/m <sup>3</sup>	0.013	0.013	0.00525	0.00525
Dioxin like PCB's ( WHO –TEQ Humans/ Mammals)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.00916	0.00916	0.000785	0.000785

Dioxin like PCB's ( WHO –TEQ Fish)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0090 1	0.0090 1	0.0010 55	0.0010 55
Dioxin like PCB's ( WHO –TEQ Birds)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.014	0.014	0.0013 7	0.0013 7
Dioxin / Furans ( WHO –TEQ Humans/ Mammals)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0051 6	0.0051 6	0.0046 5	0.0046 5
Dioxin / Furans ( WHO –TEQ Fish)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0050 1	0.0050 1	0.0047 5	0.0047 5
Dioxins / Furans ( WHO –TEQ Birds)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0105	0.0105	0.0081 5	0.0081 5
Anthanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.061	0.061
Benzo(a)anthracene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Benzo(a)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Benzo(b)fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Benzo(b)naphtho(2,1-d)thiophene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Benzo(c)phenanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Benzo(ghi)perylene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.4435	0.4435
Benzo(k)fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.0235	0.0235
Chloanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Chrysene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Cyclopenta(cd)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.008	0.008
Dibenzo(ai)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.026	0.026
Dibenzo(ah)anthracene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.011	0.011
Fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0165	0.0165	0.1302 5	0.1302 5
Indeno(123-cd)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.002	0.002	0.0535	0.0535
Naphthalene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.146	0.146	0.4015	0.4015
Total PAHs	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.454	0.454	1.332	1.332

Note [1]: Where LOD was observed on all sampling events; the max LOD result was used for the average

**Table 2: Emissions to Air from A3 and A4**

Releases to Air from Incinerators							
Parameter	Reference period	Monitoring frequency	Limit	A3		A4	
				Max	Avg	Max	Avg
Particulates	½ hr average	Continuous	30 mg/m <sup>3</sup>	0.53	0.02	0.85	0.07
	Daily average	Continuous	10 mg/m <sup>3</sup>	0.31	0.02	0.20	0.07
TOCs (as C)	½ hr average	Continuous	20 mg/m <sup>3</sup>	11.02	0.07	41.57	0.19
	Daily average	Continuous	10 mg/m <sup>3</sup>	0.43	0.07	1.07	0.19
Hydrogen chloride	½ hr average	Continuous	60 mg/m <sup>3</sup>	201.25	0.73	299.37	1.24
	Daily average	Continuous	10 mg/m <sup>3</sup>	8.29	0.73	4.39	1.21
Carbon monoxide	10 min average	Continuous	150 mg/m <sup>3</sup>	1,560.58	2.69	6,138.70	2.32
	Daily average	Continuous	50 mg/m <sup>3</sup>	22.70	2.64	54.51	2.18
Sulphur dioxide	½ hr average	Continuous	200 mg/m <sup>3</sup>	231.54	23.96	399.14	24.03
	Daily average	Continuous	50 mg/m <sup>3</sup>	45.00	20.87	47.00	24.00
Oxides of nitrogen	½ hr average	Continuous	400 mg/m <sup>3</sup>	309.80	148.07	287.91	140.86
	Daily average	Continuous	200 mg/m <sup>3</sup>	178.14	148.09	162.72	141.00
Nitrous oxide (N <sub>2</sub> O)	Daily average (units: mg/m <sup>3</sup> )	Continuous	N/A	8.45	3.43	6.02	2.47
Ammonia	Daily average (units: mg/m <sup>3</sup> )	Continuous	N/A	0.92	0.23	0.77	0.10
Hydrogen fluoride	1 hour period	Spot	2 mg/m <sup>3</sup>	0.175	0.175	0.2725	0.2725
Cd + Tl	½ – 8 hour	Spot	0.05 mg/m <sup>3</sup>	0.003	0.003	0.00125	0.00125
Hg	½ – 8 hour	Spot	0.05 mg/m <sup>3</sup>	0.0035	0.0035	0.007	0.007



Sb+As+Pb+ Cr+Co+Cu+ Mn+Ni+V	½ – 8 hour	Spot	0.5 mg/m <sup>3</sup>	0.065	0.065	0.03	0.03
Dioxins and Furans (I-TEQ)	½ – 8 hour	Spot	0.1 ng/m <sup>3</sup>	0.029	0.029	0.00755	0.00755
Dioxin like PCB's ( WHO –TEQ Humans/ Mammals)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.020885	0.020885	0.001058	0.001058
Dioxin like PCB's ( WHO –TEQ Fish)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.02352	0.02352	0.001016	0.001016
Dioxin like PCB's ( WHO –TEQ Birds)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.04073	0.04073	0.002547	0.002547
Dioxin / Furans ( WHO –TEQ Humans/ Mammals)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0245	0.0245	0.0072	0.0072
Dioxin / Furans ( WHO –TEQ Fish)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.028	0.028	0.00745	0.00745
Dioxins / Furans ( WHO –TEQ Birds)	½ – 8 hour	Spot	N/A ng/m <sup>3</sup>	0.0465	0.0465	0.0141	0.0141
Anthanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.064	0.064
Benzo(a)anthracene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Benzo(a)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Benzo(b)fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Benzo(b)naphtho(2,1-d)thiophene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Benzo(c)phenanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Benzo(ghi)perylene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.4665	0.4665
Benzo(k)fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.029	0.029
Chloanthrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Chrysene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Cyclopenta(cd)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.009	0.009
Dibenzo(ai)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.029	0.029
Dibenzo(ah)anthracene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0075	0.0075	0.0115	0.0115
Fluoranthene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0155	0.0155	0.14275	0.14275
Indeno(123-cd)pyrene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.003	0.003	0.0565	0.0565
Naphthalene	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.0775	0.0775	0.41325	0.41325
Total PAHs	½ – 8 hour	Spot	N/A µg/m <sup>3</sup>	0.402	0.402	1.399	1.399

Note [1]: Where LOD was observed on all sampling events; the max LOD observed was used for the average

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### 3. Point Source Emissions to Water

#### 3.1. Introduction

Permit Condition 3.5.1(a) and Table S3.2 requires Viridor to undertake minimum weekly spot performance monitoring of the point source emissions to water arising at sample point W1 at the Salt Union outfall.

In agreement with the Environment Agency, the outfall temperature at sample point W1 has been increased to 40°C.

A summary of the point source emissions to water monitoring data for the period is included in Table 2.

#### 3.2 Commentary on Data

Note 1: Analysis returned from the ALS laboratory indicates a high suspended solids reading of 174mg/l against a permit limit of 150mg/l. Sample was taken on the 24/08/2016 Weather reports for the time indicate that heavy rainfall was the possible contributing factor.

Note 2: Analysis returned from ALS laboratory indicates a high suspended solids reading of 174mg/l on the sample taken on 29/04/16. This was due to a very low flow rate through the outfall potentially resulting in disturbed sediment being carried through. There were no upstream or downstream impacts.

#### 3.3 Schedule Notices Issued

No Schedule Notices were issued during the review period.

**Table 3: Emissions to Water from W1**

Releases to Water via Outfall W1				
Parameter	Monitoring frequency	Limit (L) Target (T)	Maximum	Average
Suspended solids	Weekly, Spot (when flow present)	150 mg/l (L) 100 mg/l (T)	174	18.9

pH	Weekly, Spot (when flow present)	4 – 11 (L) 5 – 9 (T)	8.28	7.81
Temperature	Weekly, Spot (when flow present)	40 °C (L)	33.18	27.18
Available chlorine	Weekly, Spot (when flow present)	20 mg/l (L) 5 mg/l (T)	0.06	0.2
Oil and grease	Weekly, Spot (when flow present)	None visible	None visible	None visible

## **4. Residue Quality Monitoring Requirements**

### **4.1. Introduction**

Permit Condition 3.5.1(d) and Table S3.5 require Viridor to undertake residue quality monitoring at minimum monthly intervals for both bottom ash and APC residues.

### **4.2 Commentary on Data**

#### **Incinerator Bottom Ash**

Figures shown are an average of the compliance analysis undertaken during the review period for Phase 1 and Phase 2, which have followed the criteria laid out in the ESA protocol.

#### **Air Pollution Control Residues**

Figures shown are an average of the sampling undertaken for compliance analysis during 2016.

**Table 4: Residue Quality Monitoring**

Residue quality									
Parameter	Limit	Normal Operation				Before use of a new disposal or recycling route (Note [2])			
		Bottom ash		APC Residues		Bottom ash		APC Residues	
		Incinerator		Incinerator		Incinerator		Incinerator	
		Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Loss on ignition (%)	<5	2.99	3.03						
Antimony	---	92.54	97.89	165	114.6	54	74		
Cadmium	---	41.42	61.68	131.8	167.6	19	35		
Thallium	---	1	1	45	63.2	<1	<1		
Mercury	---	0.52	0.53	175.8	226.2	<0.5	<0.5		
Lead	---	875.09	968.34	2468.8	2328.6	1062	1046		
Chromium	---	289.22	306.79	101.2	76.6	220	130		
Copper	---	1988.97	2081.70	3318.6	3928.4	1652	1622		
Manganese	---	511.86	574.58	497.2	329.4	434	541		
Nickel	---	209.00	211.21	80.2	71.6	125	209		
Arsenic	---	23.53	27.85	45.4	39.4	19	70		
Cobalt	---	128.22	136.12	128	132.4	124	106		
Vanadium	---	143.91	171.77	114	120.8	119	139		
Zinc	---	2341.78	2246.67	4099.4	4329	2405	1963		

Dioxins/ Furans ITEQ (ng/kg)	---	6.37	5.07						
PCB (WHO- TEQ) Humans (ng/kg)	---	5.87	4.91	4.53	2.81				
Total soluble fraction (%)	---								
Metals only soluble fraction (%)	---								

Note [1]: Units mg/kg unless otherwise indicated

Note [2]: Normalised metal concentrations are reported

## 5. Performance Parameters

### 5.1. Introduction

Condition 4.2.2 and Table S4.3 of the Permit require Viridor set out the reporting criteria for performance parameters.

### 5.2 Commentary on Data

The recorded performance data is set out in Table 5.

### 5.3 Annual mass emissions of monitored pollutants

Condition 4.2.2(c) of the permit requires mass emissions of monitored pollutants to be reported on an annual basis. The recorded data is set out in Appendix 1 and is taken from the sites 2016 Pollution Inventory report.

<b>Table 5: Performance Parameters</b>	<b>Units</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>2016</b>
Refuse derived fuel incinerated (a)	tonnes	212305	224140	230272	200943	867660
Digestate incinerated (b)	tonnes	39	16.66	0	0	55.66
Biomass incinerated (c)	tonnes	0	0	0	0	0
Commercial waste incinerated (d)	tonnes	0	0	0	0	0
Total waste incinerated (a+b+c+d)	tonnes	212343	224156.66	230272	200943	867714.66
Total electrical energy generated	KWh	147185451	115335900	162790733	143359303	568671387
Total electricity exported	KWh	129218481	100496662	143564276	127007283	500286702
Electrical energy used on installation	KWh / tonne of waste incinerated	84.6	83.55	84.85	87.44	85.06
	KWh total used	17966970	18728120	19538795	17570535	73804420
Total steam exported	tonnes	136124	153730	126167	99859	515880
Fuel gas consumption	Kg / tonne of waste incinerated	0.45	0.20	0.10	0.72	0.36
	Kg total used	95599.57	44948.79	24104.55	144468.70	309121.61
Mass of Bottom Ash produced	Kg / tonne of waste incinerated	229.7	230.27	225.98	198.42	221.63
	Kg total	48775000	51614000	52039000	39870877	192298877
Mass of APC residues produced	Kg / tonne of waste incinerated	36.7	38.19	36.53	37.58	36.93
	Kg total	7785000	8292000	8414000	7551800	32042800
Mass of other solid residues produced	Kg / tonne of waste incinerated	0	0	0	0	0
Ammonia consumption	Kg / tonne of waste incinerated	2.75	3.06	2.90	2.82	2.88
	Kg total used	583000	686000	669000	565930	2503930
Activated Carbon consumption	Kg / tonne of waste incinerated	0.26	0.24	0.24	0.20	0.24
	Kg total used	57000	56000	57000	39680	209680
Lime consumption	Kg / tonne of waste incinerated	20.3	21.23	22.05	22.11	21.41
	Kg total used	4302000	4759000	5079000	4442480	18582480

Dee Water consumption	Kg / tonne of waste incinerated	100.6	156.68	115.91	137.599	127.71
Dee Water consumption	Kg total used	21355000	35119000	26692000	27649720	110815720
High Grade Water consumption	Kg / tonne of waste incinerated	824.4	902.40	727.54	701.29	790.36
	Kg total used	175048000	202265000	167534000	140921090	685768090

## 6. Periods of WID abnormal operation

Table S4.3 of the Permit requires detail of periods of WID abnormal operation to be reported on a quarterly basis.

No Abnormal operations occurred during the year 2016

## **Appendices**



## **Appendix 1 - Annual Mass Emissions**