



**Annual Performance Report 2020**  
**WP3833FT**  
**MVV Environmental Devonport Ltd**  
**Devonport Energy from Waste CHP**

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Version Control		
No	Information	Date
1	Emission data input	06/01/2021
1.1	Issue out to business functions for data input	18/01/2021
1.2	Collate inputs	21/01/2021
1.3	Collate inputs	25/01/2021
1.4	Review and Reconciliation	27/01/2021
2	Final Review and sign off	28/01/2021

Distribution	
1	Electronically in IMS Cloud Based System
2	Facility Manager
3	Operations Manager
4	QHSE Manager
5	Contracts Manager
6	Environment Agency
7	SWDWP (Client)

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.

### Plant Description and Design

The installation is designed to dispose of residual non recyclable municipal waste, commercial and industrial waste of a similar nature to residual municipal waste, by incineration. These wastes were historically landfilled. Heat energy is recovered from the incineration process in the form of electricity, which is fed into the Naval Dockyard and any excess to the national grid. A Steam take off also supplies the adjacent Naval Dockyard with district heating.

The maximum permitted operating capacity of waste throughput is 265,000 tonnes per year. The incinerator is of a mass burn design. Waste is delivered by road and tipped within the main building in the tipping hall directly into the Waste Bunker. The waste is stored and mixed in the waste bunker prior to being burnt in a moving grate incinerator plant. Heat from the combustion process is used to generate steam at high pressure. The high pressure steam is fed to a steam turbine to generate electricity. Lower pressure steam is supplied to the Devonport dockyard. This replaces steam currently generated at the dockyard in a combustion plant burning natural gas. The plant is highly efficient due to its designed ability to recover heat thus reducing thermal loss plus its very low parasitic load demand which is less than 10% of generated power. Heat not recovered in the form of electricity or steam is dissipated through air cooled condensers. The plant is also designed to be very quiet with high levels of noise and vibration attenuation.

### Summary of Operational Processes and Procedures

The installation uses a combination of techniques for treating emissions from the combustion process in order to prevent and minimise pollution. These are:

- Good combustion control T2s at 850.c
- Selective non-catalytic reduction for NOx control
- Dry scrubbing with sodium bicarbonate and activated carbon for the control of acid gases, metals and dioxins and furans
- Bag filters for particulate control
- A 95m chimney

The incineration process results in solid residues of incinerator bottom ash and air pollution control residues. Treatment for recovery or disposal of solid residues takes place clear from the installation with only minimal storage occurring onsite.

The installation processes maximise reuse and recycling all its own water, which comprises that from periodic boiler blowdown and boiler feed water treatment wastewater. However, from time to time, disposal of wastewater to sewer will be required.

The site is in the northern section of Her Majesty's Naval Base, Devonport Dockyard in Plymouth.

The installation receives primarily mixed non recyclable residual municipal wastes to include a range of commercial and industrial wastes which can be safely burnt in the incineration plant. Pre-treatment of waste is not carried out, other than the shredding of some bulky items. However, the installation does not receive wastes intended to be recovered or recycled unless they are contaminated to the extent that they are unsuitable for recovery or recycling or would otherwise be destined for landfill.

Operational Data							
Plant Size		tonnes pa	265,000	MWth		MWe	
No. of combustion lines	1	No. of Turbines:		1			

Waste types received	Unit	Q1	Q2	Q3	Q4	Year Total	%	
Household / Local Authority	tonnes	42,942	44,055	47,408	46,769	181,174	68.6%	
Commercial & Industrial		30,769	24,828	14,849	12,295	82,741	31.4%	
Hazardous		-	-	-	-	-	0.0%	
Clinical		-	-	-	-	-	0.0%	
Waste wood (biomass)		-	-	-	-	-	0.0%	
Refuse derived fuel		-	-	-	-	-	0.0%	
Solid recovered fuel		-	-	-	-	-	0.0%	
<b>Total waste received</b>			<b>73,711</b>	<b>68,883</b>	<b>62,257</b>	<b>59,064</b>	<b>263,915</b>	<b>100.0%</b>
<b>Total waste Incinerated</b>			<b>73,554</b>	<b>69,128</b>	<b>57,400</b>	<b>60,927</b>	<b>261,009</b>	<b>98.9%</b>
Rejected Waste							-	-
Waste transferred out						-	-	

Energy Usage / Export	Unit	Q1	Q2	Q3	Q4	Year Total	KWh/te
Power Generated	MWh	52,686	54,800	45,253	43,520	196,259	752
Power Exported		47,710	49,782	40,956	39,423	177,871	681
Power Used on site		4,976	5,018	4,297	4,097	18,388	70
Power Imported		-	-	334	391	725	3
Parasitic Load	%	9.4%	9.2%	9.5%	9.4%	9.7%	
Thermal Energy Produced	GWh	24	11	3	17	54	0
Thermal Energy Exported		24	11	3	17	54	0
R1 value					0.89	Design / Operational	

Disposal & Recovery	Unit	Q1	Q2	Q3	Q4	Year Total	% inputs
APC Residues - produced	tonnes		2,201	1,693	1,785	5,679	2.2%
IBA - produced		18,019	19,169	15,972	15,093	68,253	25.9%
Metals recycling		-	-	-	-	-	-

Raw Material Usage	Unit	Q1	Q2	Q3	Q4	Year Total	kg or Ltr /te
Mains Water	m <sup>3</sup>	18,772	15,801	10,465	18,275	63,313	0.24
Other Water	m <sup>3</sup>	NA	NA	NA	NA	-	-
Ammonia / Urea	kgs	51,900	47,000	36,700	36,100	171,700	0.65
Activated Carbon	kgs	14,600	15,900	13,800	14,200	58,500	0.22
Sodium Bi Carb	kgs	1,166,000	1,382,000	974,000	1,003,000	4,525,000	17.33
Fuel oil	ltrs	51,077	2,519	62,635	74,646	179,734	0.68
Gas	cf	NA	NA	NA	NA	-	-

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Summary of Hours	Line	Q1	Q2	Q3	Q4	Year Total	
Hours of waste combustion, t	1	2,184	2,184	1,810	1,849	8,027	91.4%
Hours of turbine operations, t	1	2184	2184	1809	1818	7,995	91.0%
Hours of heat / steam export		2,114	1,929	1,519	1,799	7,360	83.8%
Abnormal Events	qty.	-	-	-	-	-	None
Abnormal operation	hours	-	-	-	-	-	0.00%
Permit Breaches	qty.	-	-	-	-	-	None

### Summary of Plant Operations and Maintenance during the reporting year

The plant continues to run very well and the operational year 2020 has seen a very high "On Waste Fire" availability achieving 8,027 hrs on waste which equates to 91.63% availability for the calendar year. CHP supply remains lower than plant capability with seasonal average ranging from an average high of 14.5t/hr in Feb to a low of 1.6t/hr in Aug. The Summer period average was down to 2.8t/hr with the Winter average at just 12.18t/hr. The system is capable of supplying max 39t/hr. MVV continue to explore other CHP supply possibilities.

Despite this low CHP supply the average Net Efficiency with CHP is 36%

The main planned maintenance shutdown for 2020 was planned in June but due to CoVid-19 impact on contractor availability the decision was taken to postpone until Sept. In the end the outage was conducted across Sept/ Oct 20 with the plant off waste for 500.5hrs

#### Inspections:

Eco 3 replaced with a stainless steel, teflon coated unit last year showed no sign of corrosion.

Super Heater 2 very little corrosion, all other Super heaters no corrosion.

Pressure Parts Inspections under Written scheme undertaken and all good with no corrosion

Turbine outlet blading visual inspection good

#### Major Maintenance / Repair Works

Process water pipework all changed out to stainless due to corrosion process/fire tank dosing system enhancements project commenced

Inconel cladding extended in 2nd and 3rd pass

RH De-Slagger Chain replaced all De-Slaggers inspected

Turbine exhaust crack repairs

Extension of economiser 1 shields

ACC Pipe Hangers re-designed and replaced

Grate repairs / Feeder table repairs / refractory repairs / Riddling chute overplating repairs due to corrosion

Planned maintenance on SNCR system, Burners, Cranes, all HV systems, all sensor systems, frequency convertors, thermal imaging system, fire detection and suppression systems, hydraulic systems.

### Summary of Residue Handling for the reporting year

Prior to the year incinerator Bottom Ash (IBA) was transported from site on a daily basis to Victoria Wharf to be temporarily stored and then shipped to the Netherlands to be processed by Rock Solid to create an IBA aggregate. From February this year, all of the IBA has been transported to Hill Barton Exeter where Rock Solid enact the same storage and processing operation as in the Netherlands.

For the duration of the year APCr has predominantly been collected from site and transported to FCC in Leeds for treatment and hazardous landfill disposal. A small fraction has been transported to Germany for the purpose of salt mine reclamation.

## Annual Reporting Performance Form 1

Annual Performance Report 2020

Operator: Devonport Energy from Waste CHP

Facility: MVV Environmental Devonport Ltd

Form: Performance 1

Reporting Period from:

1st Jan 2020

to:

31st Dec 2020

### Annual Reporting of Waste Disposal and Recovery

Waste Description	Disposal Route(s)	Disposal Tonnes	Recovery Tonnes	% / tonne of waste incinerated
<b>1) Hazardous Wastes</b>				
APC Residues		7,477.0	502.0	3.1%
IBA		0.0	0.0	-
<b>Total Hazardous Waste</b>		<b>7,477.0</b>	<b>502.0</b>	<b>3.1%</b>
<b>2) Non-Hazardous Wastes</b>				
IBA		0.0	68,253.0	26.1%
Ferrous Metal				-
Process Water		0.0	0.0	0.0%
<b>Total Non-Hazardous Waste</b>		<b>0.0</b>	<b>68,253.0</b>	<b>26.1%</b>
<b>TOTAL WASTE</b>		<b>7,477.0</b>	<b>68,755.0</b>	<b>29.2%</b>

### Annual Reporting of Water and Other Raw Material Usage

Raw Material	Usage	Unit	Specific Usage	Unit
Mains Water	63313	m <sup>3</sup>	0.24	m <sup>3</sup> /te
Total Water	63313	m <sup>3</sup>	0.24	m <sup>3</sup> /te
Urea / Ammonia	171700	kg	0.66	kg/te
Activated Carbon	58500	kg	0.22	kg/te
Sodium Bicarb.	4525000	kg	17.34	kg/te

### Annual Reporting of other performance indicators

Parameter	Results by Line	
	A1	Turbine 1
Operating hours for the year, hours	8026.8	7,995
Number of periods of abnormal operation, qty.	0	0
Cumulative hours of abnormal operation for this year, hours	0	0

## Annual Reporting of Energy Usage/Export

Annual Performance Report 2020

Operator: Devonport Energy from Waste CHP

Facility: MVV Environmental Devonport Ltd

Form: Energy 1

Reporting Period from:

01 January 2020

to:

31 December 2020

Energy Source	Energy Usage	Unit	Specific Useage (KWh/tonne incinerated)
Electricity Produced	196,259	MWh	752
Electricity Imported	725.1	MWh	3
Electricity Exported	177,871	MWh	681
Steam/hot water exported	54	GWh	0

### Summary of Permit Compliance

#### 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 (8026.8Hrs)	
	Half-hourly limit	Daily limit
Particulates	100%	100%
Oxides of nitrogen	100%	100%
Sulphur dioxide	100%	100%
Carbon monoxide	99.97%	100%
Total organic carbon	100%	100%
Hydrogen chloride	100%	100%

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

Date	Summary of notification or non-compliance [including Line/Reference]	Reason	Measures taken to prevent reoccurrence
07/02/2020	Schedule 5 CO Half Hour Average Exceedance	Boiler tripped on overpressure due to large hot item falling into de-slagger	Burners were started to decrease the CO and increase boiler temperature
08/02/2020	Schedule 5 CO Half Hour Average Exceedance	Boiler tripped on overpressure due to large hot item falling into de-slagger	Burners were started to decrease the CO and increase boiler temperature
04/08/2020	Schedule 5 CO Half Hour Average Exceedance	On grate explosion resulting in overpressure trip.	Burners were started to decrease the CO and increase boiler temperature
15/08/2020	Schedule 5 CO Half Hour Average Exceedance	On grate explosion resulting in overpressure trip.	Burners were started to decrease the CO and increase boiler temperature
23/10/2020	Schedule 5 CO Half Hour Average Exceedance	On grate explosion resulting in overpressure trip.	Burners were started to decrease the CO and increase boiler temperature
13/12/2020	Schedule 5 CO 3 x Half Hour Average Exceedance (invalid day)	Plant trip, turbine bypass not opening upon turbine trip.	Burners were started to decrease the CO and increase boiler temperature

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

Date	Summary of complaint [including Line/Reference]	Reason *	Measures taken to prevent reoccurrence
02/04/2020	Complainant reported smell of burning	Investigation found cause to be off site	None
14/04/2020	Complainant reported high frequency noise.	Recirc bucket elevator	Minor defect identified and rectified.
04/06/2020	Report of noxious odour at Old School Road over past few days	Off site inspection undertaken. Not attributable to MVV	None
16/06/2020	Report of black smoke coming from chimney	Plant in normal operation and stack plume normal	None
04/07/2020	Noise complaint from local resident of Savage road	Noise coming from adjacent demolition site	None
09/09/2020	Noise complaint from Savage Road	Noise coming from adjacent demolition site	None



06/10/2020	Two reports of odour at Rodney St via the EA	Off site rounds undertaken, no odour detected. Carbon filters in full operation with no anomalies	Monitor carbon filter efficacy. Conduct off site monitoring.
18/11/2020	Resident complaint to EA about odour (Rodney Street)	Joint MVV & EA offsite tour to establish source and considered not attributable to MVV undertaking	None
* including whether substantiated by the operator or the EA			

**Summary of Plant Improvements**

**Summary of any efficiency improvements that have been completed within the year.**

**Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.**

**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.**

**Details of Public & Stakeholder Liasion****Summary of events held during the reporting year.**

Date	Description
21/02/2020	CIWM new members event
01/01/2020	Great British spring clean - litter pick (50 x attendees from local community)
Jan 2020 - Dec 2020	Annual facility open day (250 x attendees from local community)
Jan 2020 - Dec 2020	2 x 1 week work experience student placements

**List of events planned for next year**

Date	Description
Apr-21	Community litter pick
Oct-21	Annual facility open day
Jan 2020 - Dec 2020	Virtual site tours and work experience
Jan 2020 - Dec 2020	School visits - when safe to resume

### Residue Quality Monitoring Requirements

#### Summary of monitoring undertaken and compliance

Jan 2020 to Dec 2020, 12 x IBA sample analysed as per monthly programme.

May 2020 a full suite analysis on IBA undertaken for HP 1-15

APCR continues as a quarterly sample and analysis regime as per permit requirements.

Quarterly and annual residue returns completed

#### Commentary on any specific events

##### Date & Event

##### Description

None in this reporting period

### Residue Quality Monitoring Results

Parameter (unit)	Limit	Normal Operation	
		Bottom ash	APC Residues
Loss on Ignition (%)	<5%	2.01 (annual average)	
ToC (%)	<3%	0.7 (annual average)	
No. of Assessments Undertaken	---	12	4
No. of Hazardous Assessments	---	0	

#### Comments :

MVV Devonport undertook monthly sampling of Incinerator Bottom Ash iaw WM3 and ESA protocol. To the end of 2020 a total of 126 samples have been presented since commencement of operation in 2015 for analysis, of which all have returned as non-hazardous.

**Emissions to Water****Summary of monitoring undertaken and compliance**

Continuous monitoring undertaken for flow and temperature

Quarterly returns issued to regulator

P-Red list analysis for surface water run off not undertaken as all prior analysis campaigns has returned below limits of detection.

**Commentary on any specific events**

Date & Event	Description
2020	None in reporting period

**Emissions to Water / Sewer**

Parameter	Monitoring Frequency	Limit	Target	Max.	Average
Flow	Continuous	No limit	No limit	5.24m3/hr	1.62m3/hr
Temperature	Continuous	No limit	No limit	32.85°C	19.2°C

## Emissions to Air (periodically monitored)

## Summary of monitoring undertaken, standards used and compliance

Bi-annual testing in accordance with permit using MCERTS accredited and technically endorsed contractor

## Results of emissions to air that are periodically monitored

Substance	Ref. Period	Emission Limit Value	May-19	Oct-19	Average
					A1
Hydrogen fluoride	1 hr	2 mg/m <sup>3</sup>	0.17	0.2	0.185
Cd and Th and their compounds	6-8hrs	0.05 mg/m <sup>3</sup>	0.001	0.00073	0.000865
Hg and its compounds	6-8hrs	0.05 mg/m <sup>3</sup>	0.002	0.0039	0.00295
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and their compounds	6-8hrs	0.5 mg/m <sup>3</sup>	0.029	0.01	0.0195
Dioxins & Furans (I-TEQ)	6-8hrs	0.1 ng/m <sup>3</sup>	0.002	0.0042	0.0031
PCBs (WHO-TEQ Humans / Mammals)	6-8hrs	None set ng/m <sup>3</sup>	0.0005	0.00054	0.0005215
PCBs (WHO-TEQ Fish)	6-8hrs	None set ng/m <sup>3</sup>	2.7E-05	2.5E-05	0.000026
PCBs (WHO-TEQ Birds)	6-8hrs	None set ng/m <sup>3</sup>	0.00158	0.00098	0.0012775
Dioxins & Furans (WHO-TEQ Humans / Mammals)	6-8hrs	None set ng/m <sup>3</sup>	0.0017	0.0008	0.00125
Dioxins & Furans (WHO-TEQ Fish)	6-8hrs	None set ng/m <sup>3</sup>	0.0019	0.0009	0.0014
Dioxins & Furans (WHO-TEQ Birds)	6-8hrs	None set ng/m <sup>3</sup>	0.0053	0.0015	0.0034
Anthanthrene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.015	0.00785
Benzo(a)anthracene	6-8hrs	None set µg/m <sup>3</sup>	0.0032	0.0017	0.00245
Benzo(a)pyrene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Benzo(b)fluoranthene	6-8hrs	None set µg/m <sup>3</sup>	0.0035	0.0011	0.0023
Benzo(b)naphtho(2,1-d) thiophene	6-8hrs	None set µg/m <sup>3</sup>	0.0013	0.0011	0.0012
Benzo(c)phenanthrene	6-8hrs	None set µg/m <sup>3</sup>	0.0022	0.0011	0.00165
Benzo(ghi)perylene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Benzo(k)fluoranthene	6-8hrs	None set µg/m <sup>3</sup>	0.0013	0.0011	0.0012
Cholanthrene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Chrysene	6-8hrs	None set µg/m <sup>3</sup>	0.01	0.0027	0.00635
Cyclopenta(cd)pyrene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Dibenzo(ai)pyrene		None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Dibenzo(ah)anthracene	6-8hrs	None set µg/m <sup>3</sup>	0.0007	0.0011	0.0009
Fluoranthene	6-8hrs	None set µg/m <sup>3</sup>	0.0246	0.0075	0.01605
Indeno(123-cd) pyrene	6-8hrs	None set µg/m <sup>3</sup>	0.0039	0.0011	0.0025
Naphthalene	6-8hrs	None set µg/m <sup>3</sup>	0.3674	0.82	0.5937

## Annual Performance Report 2020

### Emissions to Air (continuously monitored)

#### Summary of monitoring undertaken, standards used and compliance

Continuous emission monitoring to meet BS EN 14181 / BS EN 15267-3

Bi-annual to meet BS ISO 15713 / BS EN 14385 / BS EN 13211 / BS EN 14791 / BS EN ISO 21258 / BS EN 1948 Parts 1, 2 and 3 / BS EN 1948-4 / BS ISO 11338 Parts 1 and 2 for all other determinands specified within the permit.

#### Results of emissions to air that are continuously monitored

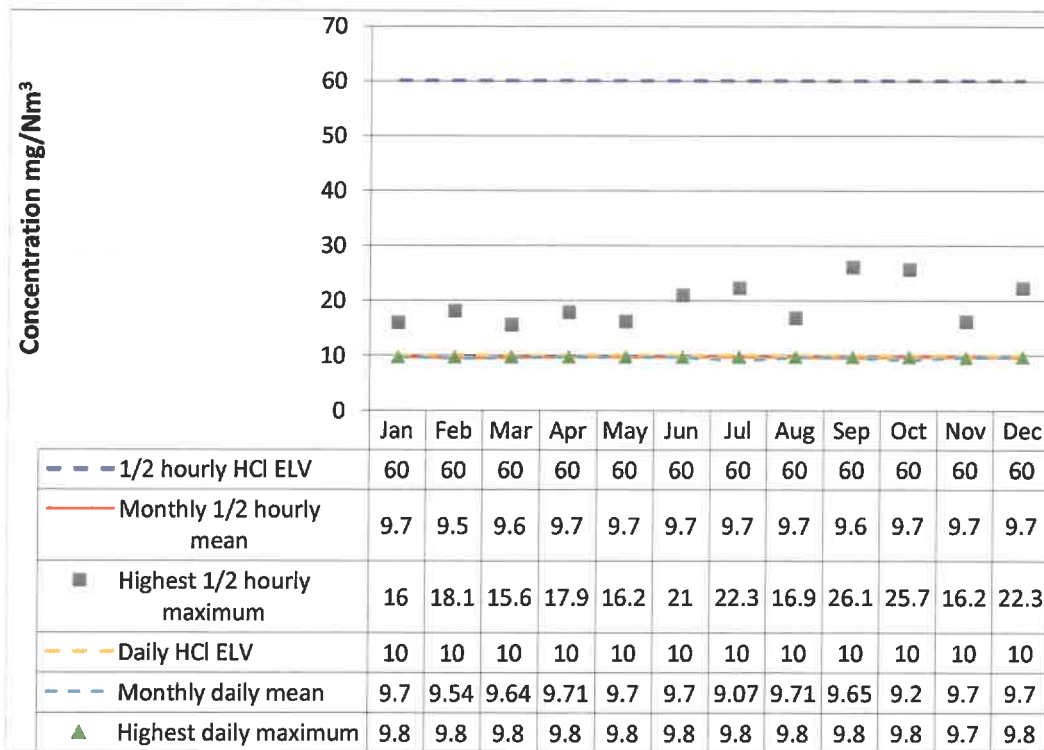
Substance	Reference Period	Emission Limit Value	A1	
			Max.	Avg.
Oxides of nitrogen	Daily mean	200 mg/m <sup>3</sup>	188.8	169.86
	½ hourly mean	400 mg/m <sup>3</sup>	226.5	169.35
Particulates	Daily mean	10 mg/m <sup>3</sup>	0.4	0.3
	½ hourly mean	30 mg/m <sup>3</sup>	0.4	0.11
Total Organic Carbon	Daily mean	10 mg/m <sup>3</sup>	2.4	0.39
	½ hourly mean	20 mg/m <sup>3</sup>	13.1	0.43
Hydrogen chloride	Daily mean	10 mg/m <sup>3</sup>	9.5	9.59
	½ hourly mean	60 mg/m <sup>3</sup>	26.1	9.67
Sulphur dioxide	Daily mean	50 mg/m <sup>3</sup>	28.9	15.77
	½ hourly mean	200 mg/m <sup>3</sup>	75.5	15.8
Carbon monoxide	Daily mean	50 mg/m <sup>3</sup>	16.4	4.45
	½ hourly mean *	100 mg/m <sup>3</sup> *	437.2	4.62

\* = delete or amend as appropriate

Monitoring of Hydrogen Chloride emissions

See Notes in Cell Q3

mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly HCl ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily HCl ELV	Monthly daily mean	Highest daily maximum
Jan	60	9.7	16	10	9.7	9.8
Feb	60	9.5	18.1	10	9.54	9.8
Mar	60	9.6	15.6	10	9.64	9.8
Apr	60	9.7	17.9	10	9.71	9.8
May	60	9.7	16.2	10	9.7	9.8
Jun	60	9.7	21	10	9.7	9.8
Jul	60	9.7	22.3	10	9.07	9.8
Aug	60	9.7	16.9	10	9.71	9.8
Sep	60	9.6	26.1	10	9.65	9.8
Oct	60	9.7	25.7	10	9.2	9.8
Nov	60	9.7	16.2	10	9.7	9.7
Dec	60	9.7	22.3	10	9.7	9.8

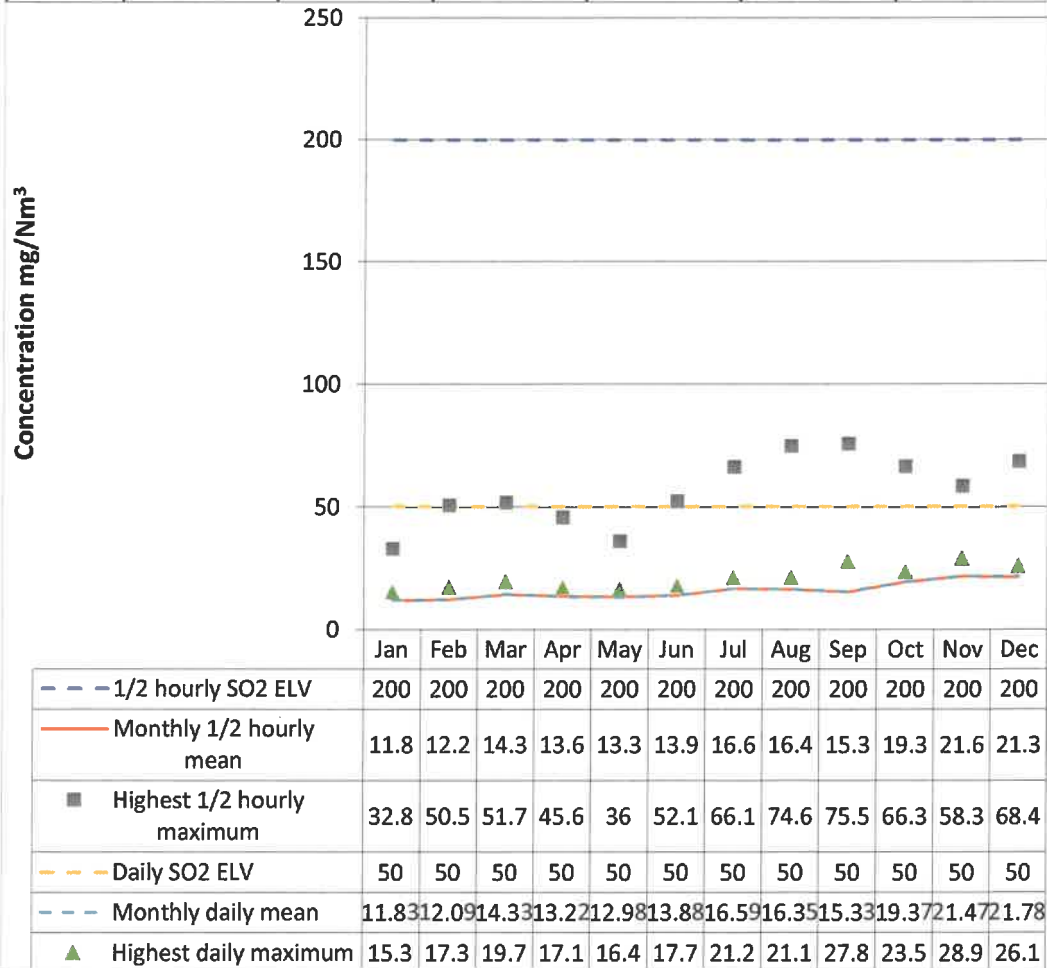




Monitoring of Sulphur dioxide emissions

See Notes in Cell Q3

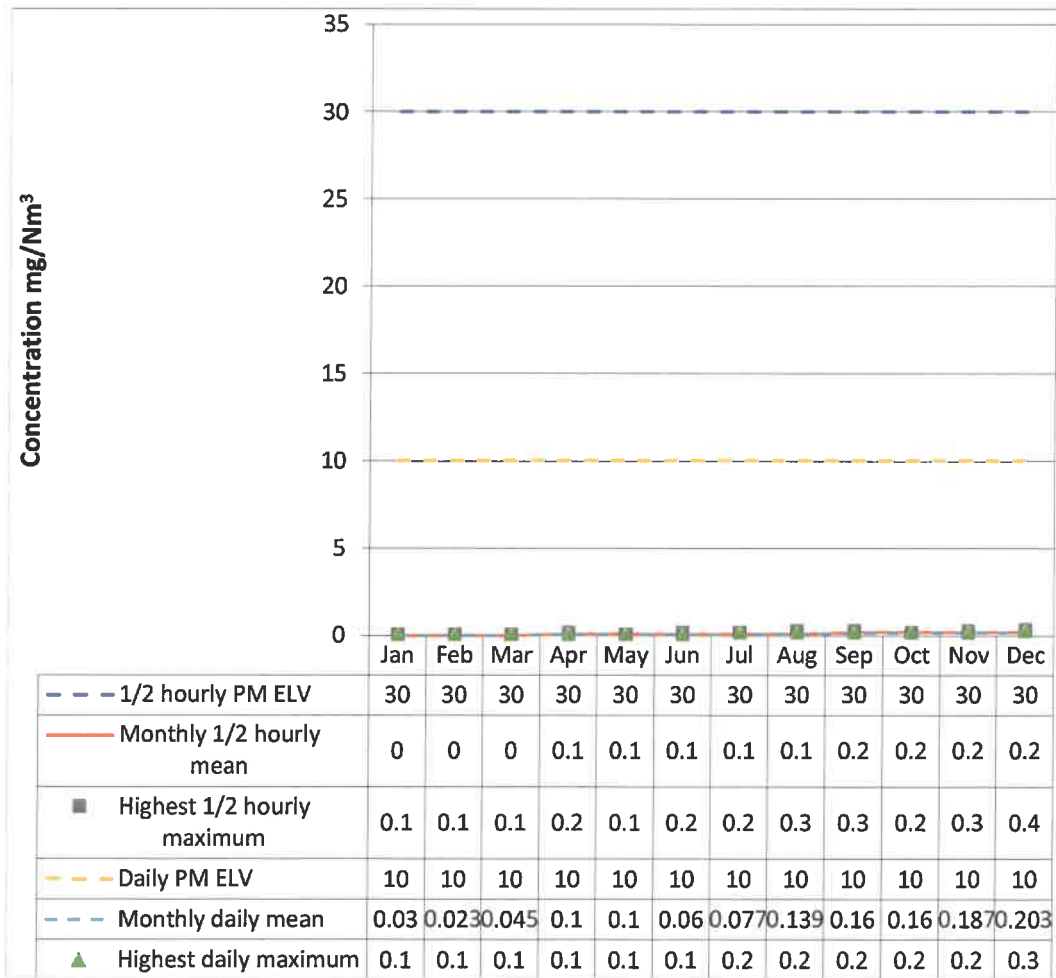
mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly SO2 ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily SO2 ELV	Monthly daily mean	Highest daily maximum
Jan	200	11.8	32.8	50	11.83	15.3
Feb	200	12.2	50.5	50	12.09	17.3
Mar	200	14.3	51.7	50	14.33	19.7
Apr	200	13.6	45.6	50	13.22	17.1
May	200	13.3	36	50	12.98	16.4
Jun	200	13.9	52.1	50	13.88	17.7
Jul	200	16.6	66.1	50	16.59	21.2
Aug	200	16.4	74.6	50	16.35	21.1
Sep	200	15.3	75.5	50	15.33	27.8
Oct	200	19.3	66.3	50	19.37	23.5
Nov	200	21.6	58.3	50	21.47	28.9
Dec	200	21.3	68.4	50	21.78	26.1



Monitoring of Particulate matter emissions

See Notes in Cell Q3

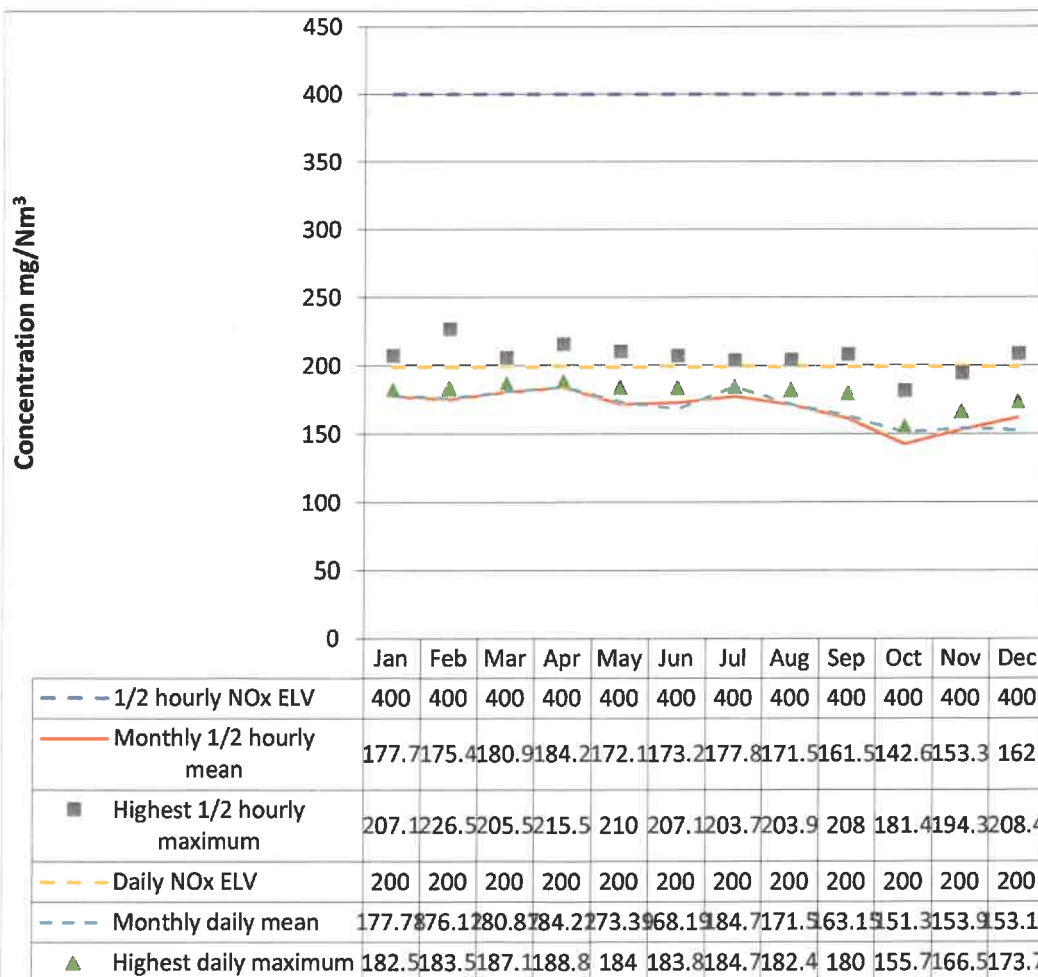
mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly PM ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily PM ELV	Monthly daily mean	Highest daily maximum
Jan	30	0	0.1	10	0.03	0.1
Feb	30	0	0.1	10	0.023	0.1
Mar	30	0	0.1	10	0.045	0.1
Apr	30	0.1	0.2	10	0.1	0.1
May	30	0.1	0.1	10	0.1	0.1
Jun	30	0.1	0.2	10	0.06	0.1
Jul	30	0.1	0.2	10	0.077	0.2
Aug	30	0.1	0.3	10	0.139	0.2
Sep	30	0.2	0.3	10	0.16	0.2
Oct	30	0.2	0.2	10	0.16	0.2
Nov	30	0.2	0.3	10	0.187	0.2
Dec	30	0.2	0.4	10	0.203	0.3



Monitoring of Oxides of Nitrogen emissions

See Notes in Cell Q3

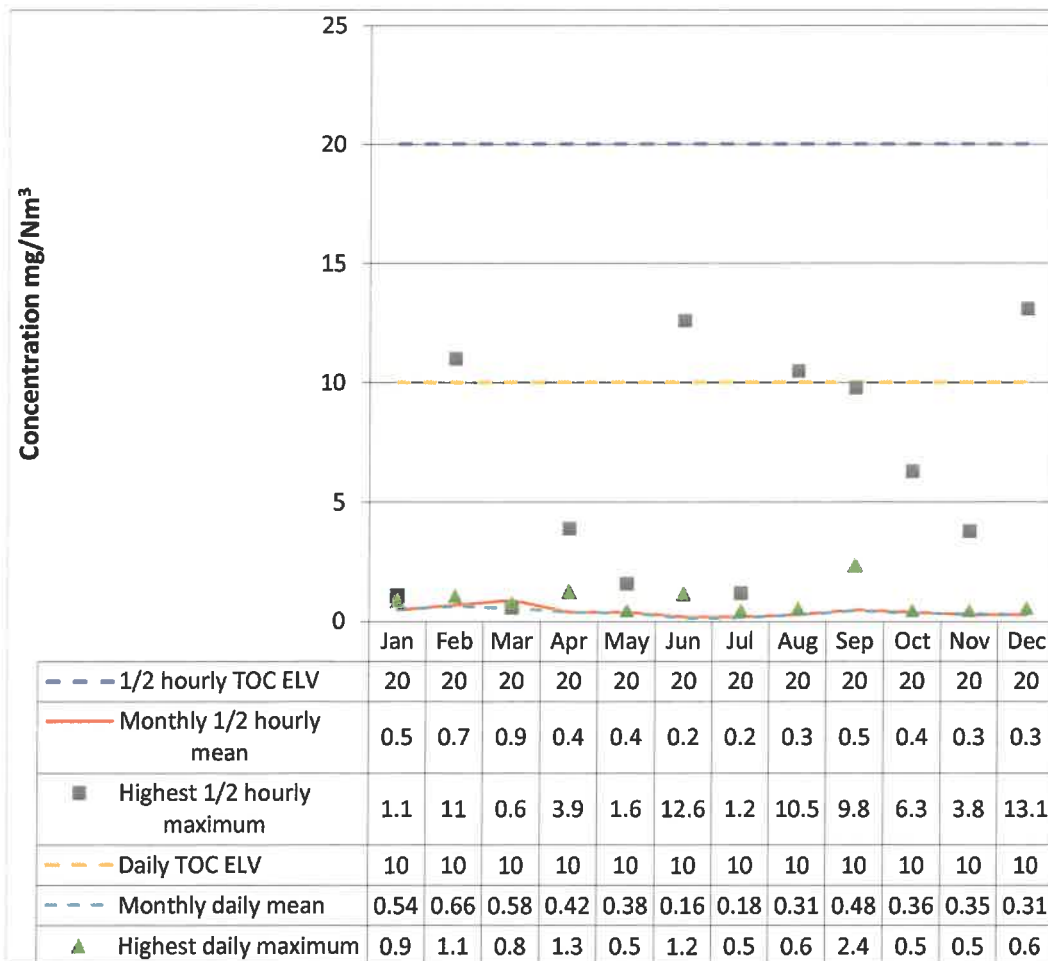
mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly NOx ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily NOx ELV	Monthly daily mean	Highest daily maximum
Jan	400	177.7	207.1	200	177.78	182.5
Feb	400	175.4	226.5	200	176.12	183.5
Mar	400	180.9	205.5	200	180.87	187.1
Apr	400	184.2	215.5	200	184.22	188.8
May	400	172.1	210	200	173.39	184
Jun	400	173.2	207.1	200	168.19	183.8
Jul	400	177.8	203.7	200	184.7	184.7
Aug	400	171.5	203.9	200	171.5	182.4
Sep	400	161.5	208	200	163.15	180
Oct	400	142.6	181.4	200	151.3	155.7
Nov	400	153.3	194.3	200	153.9	166.5
Dec	400	162	208.4	200	153.14	173.7



Monitoring of Total organic carbon emissions

See Notes in Cell Q3

mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly TOC ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily TOC ELV	Monthly daily mean	Highest daily maximum
Jan	20	0.5	1.1	10	0.54	0.9
Feb	20	0.7	11	10	0.66	1.1
Mar	20	0.9	0.6	10	0.58	0.8
Apr	20	0.4	3.9	10	0.42	1.3
May	20	0.4	1.6	10	0.38	0.5
Jun	20	0.2	12.6	10	0.16	1.2
Jul	20	0.2	1.2	10	0.18	0.5
Aug	20	0.3	10.5	10	0.31	0.6
Sep	20	0.5	9.8	10	0.48	2.4
Oct	20	0.4	6.3	10	0.36	0.5
Nov	20	0.3	3.8	10	0.35	0.5
Dec	20	0.3	13.1	10	0.31	0.6



Monitoring of Carbon Monoxide (half hourly)

See Notes in Cell Q3

mg/Nm <sup>3</sup>	1/2 Hourly Reference Periods			Daily Reference Periods		
	1/2 hourly CO ELV	Monthly 1/2 hourly mean	Highest 1/2 hourly maximum	Daily CO ELV	Monthly daily mean	Highest daily maximum
Jan	100	2.8	14.3	50	1.82	4.8
Feb	100	3.7	213.2	50	3.78	13.5
Mar	100	2.6	6.5	50	2.6	4.2
Apr	100	2.4	46.5	50	2.14	3.7
May	100	13.3	36	50	12.98	16.4
Jun	100	2.9	25.8	50	2.91	7.5
Jul	100	4.2	15.1	50	4.18	6.2
Aug	100	5.5	437.2	50	5.46	16.2
Sep	100	4.8	31.5	50	4.77	6.6
Oct	100	3.6	122.2	50	3.56	6.7
Nov	100	4.1	15.5	50	4.14	5.7
Dec	100	5.5	205.9	50	5.06	6.4

