

Permit Number: EPR/AP3139FT

Operator:

Dwr Cymru Cyfyngedig

Facility: Five Fords WwTW CHP Facility

Form Number: Air1 / 23/03/2018

Reporting of emissions to air for the period from 01/01/2017 to 31/12/2017

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ⁽¹⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Uncertainty ⁽⁴⁾
A1	Oxides of Nitrogen (NO and NO ₂) expressed as NO ₂	500 mg/m ³	Hourly average	389.74 mg/m ³	BS EN 14792	02/10/2017 16:01 – 17:00	3%
A1	Carbon Monoxide	1400 mg/m ³	Hourly average	890.17 mg/m ³	BS EN 15058	02/10/2017 16:01 – 17:00	2%
A1	Sulphur Dioxide	-	Hourly average	6.00 mg/m ³	BS EN 14791	02/10/2017 15:30 – 16:30	13%
A1	Total VOC's	1000 mg/m ³	Hourly average	1672.55 mgC/m ³	BS EN 12619	02/10/2017 16:01 – 17:00	3%
A1	NM VOC's	-	Hourly average	1.57 mg/m ³	BS EN 13649	02/10/2017 16:35 – 17:35	28%
A2*	Oxides of Nitrogen (NO and NO ₂) expressed as NO ₂	500 mg/m ³	Hourly average	398.55 mg/m ³	BS EN 14792	02/10/2017 14:01 – 15:00	3%
A2*	Carbon Monoxide	1400 mg/m ³	Hourly average	908.35 mg/m ³	BS EN 15058	02/10/2017 14:01 – 15:00	2%
A2*	Sulphur Dioxide		Hourly average	5.50 mg/m ³	BS EN 14791	02/10/2017 13:04 – 16:04	13%
A2*	Total VOC's	1000 mg/m ³	Hourly average	1866.51 mgC/m ³	BS EN 12619	02/10/2017 14:01 – 15:00	3%
A2*	NM VOC's	-	Hourly average	0.0077 mg/m ³	BS EN 13649	02/10/2017 14:17 – 15:17	30%
A3 (operating on Biogas)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	N/A	-	BS EN 14792	N/A	N/A
A3 (operating on Biogas)	Carbon Monoxide	1400 mg/m ³	N/A	-	BS EN 15058	N/A	N/A
A3 (operating on Biogas)	Sulphur Dioxide	-	N/A	-	BS EN 14791	N/A	N/A

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A3 (operating on Biogas)	Total VOC's	1000 mg/m ³	N/A	-	BS EN 12619 BS EN 13526	N/A	N/A
A3 (operating on Biogas)	NMVOC's	-	N/A	-	BS EN 13649	N/A	N/A
A3 (operating on Natural Gas)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-	Hourly average	141.07 mg/m ³	BS EN 14792	03/10/2017 10:32 – 12:01	2%
A3 (operating on Natural Gas)	Carbon Monoxide	-	Hourly average	21.16 mg/m ³	BS EN 15058	03/10/2017 10:32 – 12:01	4%

* Engine tested at 85% of its power rate.

- [1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
- [2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
- [3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
- [4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed  Date 23/03/2018
 (Authorised to sign as representative of Operator)
 ANDREW DIXON
 ENERGY OPS MANAGER

Permit Number: EPR/AP3139FT

Operator:

Dwr Cymru Cyfyngedig

Facility: Five Fords WwTW CHP Facility

Form Number: Performance1 / 23/03/2018

Reporting of other performance indicators for the period 01/01/2017 to 31/12/2017

Parameter	Units
Fuel input to installation (biogas)	3,910,419.00 m ³
Fuel input to installation (Natural Gas)	150,884.5 m ³ or 101.5 Tonnes
CHP engine efficiency	32 %
Hours of operation for both engines and hours that engines operated in CHP mode	6849.5 Hours all CHP mode
Hours run on biogas (boiler)	0 Hours
Hours run on Natural gas (boiler)	6,163 Hours
Operational hours of waste gas burner	58.75 h <10% of time < 876 Hours
Biogas burnt by waste gas burner	3,334 m ³

Operator's comments :

During 2017 the engines operated well, in conjunction with the Gas to Grid plant. DCWW completed all planned maintenance including a replacement of the activated carbon in one of the VOC filters on the Gas to grid plant and also replaced the media in the Siloxane Removal System. The plant operated consistently and there are no major periods of downtime or reactive breakdown to report. A planned rebuild of CHP engine #2 was completed in November 2017.

Signed

(Authorised to sign as representative of Operator)

ANDREW DIXON

ENERGY OPS MANAGER

Date 31/01/2018

Permit Number: EPR/AP3139FT

Operator: Dwr Cymru Cyfyngedig

Facility: Five Fords WwTW CHP Facility

Form Number: Performance2 / 23/03/2018

Reporting of other performance indicators for the period 01/01/2017 to 31/12/2017

Parameter	Units
Electrical energy generated	2990.3 MWh
Thermal energy generated	618.9 MWh
Biomethane fed into National Grid	820.52 Tn

Signed

Date 23/03/2018

(Authorised to sign as representative of Operator)

ANDREW OLKOW
ENERGY OPS MANAGER