

Mrs Liz Parr
Natural Resources Wales
Rivers House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

27th January 2015

Your Ref. EPR/JP3632ZH

Dear Mrs Parr

Please find enclosed our 3 monthly returns for Quarter 4 2014 up until 31st December 2014 for the Releases to Air form A1(a).

As required by our permit find enclosed the annual report forms A1 Extractive Testing results, E1 Energy Usage, WR1 Waste report, PI1 Performance Indicators, MR1 Mass Releases, LCPD1 LCPD Energy Usage and WU1 Water Usage. Also enclosed are copies of our Environmental Objectives and Targets and the 2014 Fugitive Emissions review.

Please forward to the relevant inspector and contact me if there are any questions in relation to these returns.

Yours sincerely,



Andrew Sanderson
Operations Manager

Permit Reference Number: EPR/JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number : A1

Reporting of Emissions to Air for the period from 1st January 2014 to 31st December 2014

Table 1: Burning Natural Gas

Emission Point	Substance / Parameter	Emission Limit Value	Result Annual Extractive Test	Result 95%ile [6]	Test Method [2]	Result Maximum 1/2 Hourly Concentration	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
A1	Oxides of Nitrogen (as NO ₂)	125mg/m ³	53.54 mg/m ³	54.07 mg/m ³	BS EN 14792	54.10 mg/m ³	02/09/2014	UKAS/MCERTS	3%
A1	Carbon Monoxide	80 mg/m ³	1.24 mg/m ³	1.81 mg/m ³	BS EN 15058	1.88 mg/m ³	09:31 – 15:30	UKAS/MCERTS	4%
A2	Oxides of Nitrogen (as NO ₂)	125 mg/m ³	64.57 mg/m ³	65.27 mg/m ³	BS EN 14792	65.34 mg/m ³	03/09/2014	UKAS/MCERTS	3%
A2	Carbon Monoxide	80 mg/m ³	1.35 mg/m ³	1.97 mg/m ³	BS EN 15058	2.04 mg/m ³	13:01 – 18:00	UKAS/MCERTS	4%
A3	Oxides of Nitrogen (as NO ₂)	125 mg/m ³	75.06 mg/m ³	77.92 mg/m ³	BS EN 14792	78.85 mg/m ³	04/09/2014	UKAS/MCERTS	5%
A3	Carbon Monoxide	80 mg/m ³	14.59 mg/m ³	15.07 mg/m ³	BS EN 15058	15.15 mg/m ³	09:31 – 15:30	UKAS/MCERTS	4%
A4	Oxides of Nitrogen (as NO ₂)	45 mg/m ³	28.96 mg/m ³	29.58 mg/m ³	BS EN 14792	29.40 mg/m ³	01/09/2014	UKAS/MCERTS	3%
A4	Carbon Monoxide	80 mg/m ³	0.27 mg/m ³	0.40 mg/m ³	BS EN 15058	0.29 mg/m ³	12:10 – 13:10	UKAS/MCERTS	3%
A5	Oxides of Nitrogen (as NO ₂)	45 mg/m ³	30.09 mg/m ³	30.55 mg/m ³	BS EN 14792	30.31 mg/m ³	01/09/2014	UKAS/MCERTS	3%
A5	Carbon Monoxide	80 mg/m ³	0.55 mg/m ³	0.65 mg/m ³	BS EN 15058	0.58 mg/m ³	13:20 – 14:20	UKAS/MCERTS	3%

[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 Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. 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 accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The result is the 95%ile concentration

Signed Andrew Sanderson Date 27/01/2015
(authorised to sign as representative of the Operator)

Permit Reference Number : JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number : E1

Reporting of Energy Usage for the year 2014

Energy Source	Energy Usage		CO ₂ Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh	38,821	6,444
Natural Gas	MWh	917,976	166,071
Gas Oil	MWh	38.61	10.31
TOTAL	-	956,836	172,525

* Conversion factor for delivered electricity to primary energy = 2.4

Trends in Energy Usage Year	Parameter		
	Primary Energy usage	CO ₂ produced tonnes	CO ₂ per tonne steam
2007	869,808	165,123	0.26630
2008	839,912	171,159	0.24614
2009	830,085	151,740	0.25710
2010	871,120	156,356	0.23406
2011	873,246	157,637	0.23527
2012	908,120	164,166	0.22791
2013	926,208	167,654	0.23559
2014	956,836	172,525	0.22556

Operator's comments :

Signed Andrew Sanderson
(authorised to sign as representative of the Operator)

Date...27/01/2015.....

Permit Reference Number : JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number :WR1

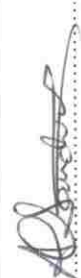
Reporting of Waste Disposal and Recovery for the year 2014

Waste Description	Disposal Route	Tonnes	Recovery Tonnes
1) Hazardous Wastes	Treatment and recovery	0	
2) Non-Hazardous Wastes			
General Waste	Landfill	6	0
Sewage	Treatment	90	Unknown
Metal	Recovery	1.5	Unknown
Mixed Recycling	Recovery	3	Unknown
TOTAL WASTE	-	100.5	

Trends in Waste Disposal and Recovery Year	Hazardous Waste Parameter	Non-Hazardous Waste	Total Waste
2006	6.27	26.99	33.26
2007	20.5	45.2	65.7
2008	4.6	59.4	64
2009	3.5	102.5	106
2010	3.725	107.52	111.245
2011	5.85	108.58	114.43
2012	8.185	109.59	117.775
2013	1.05	123.1	124.15
2014	0	100.5	100.5

Operator's comments :

Signed ...Andrew Sanderson.....


(authorised to sign as representative of the Operator)

Date.....27/01/2015.....

Permit Reference Number : JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number : WU1

Reporting of Water Usage for the year 2014		Usage (m ³)	Specific Usage (m ³)
Water Source			
Well Water		505,382	
Demin Water to Dow Corning			125,139
TOTAL WATER USAGE		505,382	125,139

Trends in Water Usage		
Year	Named Water source	Total Water usage
2010	Well Water	538,992
2011	Well Water	531,705
2012	Well Water	483,047
2013	Well Water	493,645
2014	Well Water	505,382

Operator's comments :

Signed ...Andrew Sanderson.....
(authorised to sign as representative of the Operator)

Date.....27/01/2015.....

Operator: Cofely Industrial Energy Services

Permit Reference Number: JP3632ZH

Form Number: MR1

Installation: Barry Cogeneration Plant

Reporting of Mass Releases for the year 2014

Parameter	t/yr
Mass releases of oxides of nitrogen as NO ₂ from LCPD plant (i.e. excluding gas turbines)	126.41
Mass releases of oxides of nitrogen as NO ₂ from all plant	127.07
Mass releases of carbon monoxide from LCPD plant (i.e. excluding gas turbines)	27.82
Mass releases of carbon monoxide from all plant	27.97
Mass releases of sulphur dioxide from A1-A5, from LCPD plant (i.e. excluding gas turbines)	0.56
Mass releases of sulphur dioxide from all plant	0.56

Operator's comments :

Signed Andrew Sanderson Date 27/01/2015
(authorised to sign as representative of the Operator)

Permit Reference Number : JP3632ZH

Operator : Cofely Industrial Services

Installation : Barry Cogeneration Plant

Form Number : PI1

Reporting of Performance Indicators for the year 2014

Annual Production/Treatment	
Generation of steam	764,859
Generation of electricity	158,411

Environmental Performance Indicators

Parameter	Annual Average	Units
Waste per tonne of steam	0.0001	Tonnes waste / tonne steam
Waste per MWh of electricity	0.0006	Tonnes waste / MWh electricity
Water usage per tonne of steam	0.6608	m ³ water / tonne steam
Water usage per MWh of electricity	3.1903	m ³ water /MWh electricity
Energy input per tonne of steam	1.2510	MWh energy input / tonne steam
Energy input per MWh of electricity produced	6.0402	MWh energy input / MWh electricity

Trends in Environmental Performance						
Year	Waste/T steam	Waste/MWh electricity	Water usage /Tonne steam	Water usage/M Wh of electricity	Energy input/T steam	Energy input/MWh electricity
2008	0.0001	0.00044	0.853	3.929	1.208	5.280
2009	0.0001	0.0008	0.895	4.033	1.406	6.334
2010	0.0001	0.0008	0.805	3.934	1.304	6.370
2011	0.0001	0.0008	0.7935	3.756	1.303	6.170
2012	0.0001	0.0008	0.6706	3.126	1.260	5.877
2013	0.0001	0.0008	0.6944	3.289	1.302	6.171
2014	0.0001	0.0006	0.6608	3.1903	1.251	6.040

Operator's comments :

SignedAndrew Sanderson..... Date.....27/01/2015.....
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Permit Reference Number : JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number : LCPD1

LCPD Energy Usage for the year 2014

Net Calorific Values of fuels burnt		Trends in LCPD Plant Energy Usage						Total annual energy usage for fuels used on all plant MJ net		
Natural Gas MJ/M3	Distillate Fuel Oil MJ/KG	Year	Total annual energy usage for LCPD combustion plant MJ net	Total annual energy usage for all combustion plant MJ net	Total annual energy usage for fuels used on LCPD plant MJ net		Natural Gas MJ net	Gas Oil net	Distillate Fuel Oil net	Total annual energy usage for fuels used on all plant MJ net
		2006	2,981,360,575	3,016,154,722	2,981,360,575	0	3,015,306,332	848,389		
		2007	2,744,470,970	2,827,479,138	2,735,165,022	9,305,948	2,818,173,190	9,305,948		
		2008	2,962,410,332	3,013,222,604	2,960,073,332	2,337,000	3,010,885,604	2,337,000		
		2009	2,645,771,411	2,687,613,424	2,645,430,411	341,000	2,687,272,424	341,000		
		2010	2,784,078,512	2,820,351,466	2,783,796,056	289,000	2,820,069,010	289,000		
		2011	2,811,342,557	2,835,610,626	2,809,712,557	1,630,000	2,833,980,626	1,630,000		
		2012	2,882,783,244	2,908,180,629	2,882,600,244	183,000	2,907,997,629	183,000		
		2013	2,924,784,720	2,931,302,593	2,924,784,720	0	2,931,302,593	0		
		2014	3,285,960,355	3,304,852,600	3,285,960,355	139,000	3,304,852,600	139,000		
Total annual energy usage for LCPD combustion plant MJ net			3,285,960,355							
Total annual energy usage for all combustion plant MJ net			3,304,852,600							
Total annual energy usage for fuels used on LCPD plant MJ net			3,285,960,355							
Total annual energy usage for fuels used on all plant MJ net			3,304,852,600							
Natural Gas MJ net										
Distillate Fuel Oil net										
Total annual energy usage for fuels used on all plant MJ net										
Natural Gas MJ net										
Distillate Fuel Oil net										

Operator's comments :

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Date...27/01/2015.....

Permit Reference Number: EPR/JP3632ZH

Operator : Cofely Industrial Energy Services

Installation : Barry Cogeneration Plant

Form Number : A1(a)

Reporting of 3 monthly continuous monitoring Emissions to Air for the period from 1st October 2014 to 31st December 2014

Table 1: Burning Natural Gas

Emission Point	Substance / Parameter	Emission Limit Value	Result 95%ile [6]	Test Method [2]	Result Maximum Hourly Concentration	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
A1	Oxides of Nitrogen (as NO ₂)	125mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	62.22	BS EN 14792	93.42	99.8%	MCert Sira MC040019.01	5.4mg/m ³
A1	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	16.22	BS EN 15058	87.89	99.8%	MCert Sira MC040019.01	8mg/m ³
A2	Oxides of Nitrogen (as NO ₂)	125 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	76.93	BS EN 14792	98.51	99.8%	MCert Sira MC040019.01	5.4mg/m ³
A2	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	56.74	BS EN 15058	77.33	99.8%	MCert Sira MC040019.01	8mg/m ³
A3	Oxides of Nitrogen (as NO ₂)	125 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	78.06	BS EN 14792	91.08	99.8%	MCert Sira MC040019.01	5.4mg/m ³

A3	Carbon Monoxide	maximum average value not exceeding 1.5 times those values) 80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	15.45	BS EN 15058	66.69	99.8%	MCert MC040019.01	8mg/m ³
A4	Oxides of Nitrogen (as NO2)	45 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only				N/A	N/A
A4	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only				N/A	N/A
A5	Oxides of Nitrogen (as NO2)	45 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only				N/A	N/A
A5	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only				N/A	N/A

[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 Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. 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 accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The result is the 95%ile concentration

Table 2: Burning Distillate Fuel Oil

Emission Point	Substance / Parameter	Emission Limit Value	Hours of Operation	Result of 95%ile [6]	Test Method [2]	Result Maximum 1/2 Hourly Concentration	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
A1	Oxides of Nitrogen (as NO ₂)	160mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						
A1	Carbon Monoxide	80 mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						
A2	Oxides of Nitrogen (as NO ₂)	160 mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						
A2	Carbon Monoxide	80 mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						
A3	Oxides of Nitrogen (as NO ₂)	160 mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						
A3	Carbon Monoxide	80 mg/m ³ (95% of 1/2 hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	0						

A4	Oxides of Nitrogen (as NO ₂)	65 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only if in operation on Fuel oil						
A4	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only if in operation on Fuel oil						
A5	Oxides of Nitrogen (as NO ₂)	65 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only if in operation on Fuel oil						
A5	Carbon Monoxide	80 mg/m ³ (95% of ½ hourly readings in each 24hr period not exceeding those limits and the maximum average value not exceeding 1.5 times those values)	Not required Annual Extractive testing only if in operation on Fuel oil						

[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 Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.

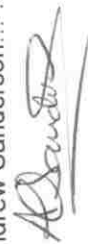
[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] The result is the 95%ile concentration

Signed Andrew Sanderson.....



Date... 27/01/2015.....