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TOYOTA

Lara Cubley
Regulatory Officer
Natural Resources Wales
Chester Road
Buckley
Flintshire, CH7 3AJ

Ref: Environmental Permit EPR/BK6483IU/V003

Date: 19/01/2015

Dear Lara,

Please find enclosed the returns for emissions monitoring and performance during 2014.

Please note:

1. All particulates results are reported as an average of 3x 1 hour samples.
2. Phenol on ST1 is reported as a 4 hour average (as notified in previous email).
3. CO on ST2 is reported as a full shift average (as notified in previous email).
4. Site collected rainwater is not reported.
5. Site generated electricity (solar PV) is not reported.
6. The Bag filter dust weight is low in 2014, due to a delay in waste shipment.

If you have any queries, please do not hesitate to contact me.

Yours sincerely,



Keith Martin
Senior Engineer
Facilities and Environment

Enc: Reporting forms Air1a – f, Water1, Sewer1, Waterusage1, Energyusage1, Performance1



Permit Number: EPR/BK6483IU/V003

Operator: Toyota Manufacturing UK Ltd

Facility: Deeside Engine Casting

Form Number: Air1a / 280709

Reporting of emissions to air for the year2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST1	Particulate	5 mg/m ³		1 hour (avg 3x 1hr)	0.32 mg/m ³	BS EN13284-1	23/09/2014, 1115 – 1500 hrs	0.64 mg/m ³
ST1	VOCs (expressed as Total Organic Carbon)	50 mg/m ³		1 hour	4.1 mg/m ³	BS EN 13526	26/09/2014, 0926 – 1026 hrs	1.2 mg/m ³
ST1	Formaldehyde	1 mg/m ³		1 hour	0.03 mg/m ³	BS EN 13649	24/09/2014, 1032 – 1132 hrs	0.02 mg/m ³
ST1	Phenol	0.25 mg/m ³		4 hour (required for low limit of detection)	<0.21 mg/m ³ (< limit of detection)	BS EN 13649	24/09/2014, 0920 – 1420 hrs	0.24 mg/m ³
ST1	Ammonia	N/A		1 hour	0.20 mg/m ³ (< limit of detection)	BS EN 14791	24/09/2014, 1210 – 1310 hrs	0.02 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed 
(Authorised to sign as representative of Operator)

Date: 19/01/15

Permit Number: EPR/BK6483IU/V003

Operator: Toyota Manufacturing UK Ltd

Facility: Deeside Engine Casting

Form Number: Air1b / 280709

Reporting of emissions to air for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST2	Particulate	5 mg/m ³		1 hour (avg 3x 1 hr)	1.0 mg/m ³	BS EN 13284-1	22&23/09/2014, 1239 – 0931 hrs	0.76 mg/m ³
ST2	Oxides of Nitrogen (as NO ₂)	100 mg/m ³		1 hour	22.0 mg/m ³	BS EN 14792	24/09/2014, 0730 – 1550hrs	1.7 mg/m ³
ST2	CO	150 mg/m ³		Average over production shift	Min 16.0 mg/m ³ Max 36.6 mg/m ³	BS EN 15058	24/09/2014, 0730 – 1550 hrs 25&26/09/2014, 2030 – 0450 hrs	2.1 mg/m ³ 2.1 mg/m ³
ST2	HCl	10 mg/m ³		1 hour	0.08 mg/m ³	BS EN 1911	23/09/2014, 1330 – 1430 hrs	0.01 mg/m ³
ST2	Fluorides	1 mg/m ³		1 hour	0.20 mg/m ³	BS ISO 15713	23/09/2014, 1445 – 1545 hrs	0.02 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date: 19/01/15

Permit Number: EPR/BK6483IU/V003

Operator: Toyota Manufacturing UK Ltd

Facility: Deeside Engine Casting

Form Number: Air1c / 280709

Reporting of emissions to air for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST4	Particulate	5 mg/m ³		1 hour (avg 3x 1 hr)	0.5 mg/m ³	BS EN 13284-1	05/11/2014, 1140 – 1502 hrs	0.32 mg/m ³
ST4	Oxides of Nitrogen (as NO ₂)	100 mg/m ³		1 hour	5.8 mg/m ³	BS EN 14792	05/11/2014, 1235 – 1335 hrs	1.7 mg/m ³
ST4	CO	150 mg/m ³		1 hour	28.0 mg/m ³	BS EN 15058	05/11/2014, 1235 – 1335 hrs	2.2 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.



Signed
(Authorised to sign as representative of Operator)

Date: 19/01/15

Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd
 Facility: Deeside Engine Casting Form Number: Air1d / 280709

Reporting of emissions to air for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST9	Particulate	5 mg/m ³		1 hour (avg 3x 1 hr)	0.73 mg/m ³	BS EN 13284-1	25& 26/09/2014, 1240 – 0909 hrs	0.52 mg/m ³
ST9	Formaldehyde	7 mg/m ³		1 hour	0.23mg/m ³	BS EN 13649	25/09/2014, 1247 – 1347 hrs	0.03 mg/m ³
ST9	Ammonia	10 mg/m ³		1 hour	0.28 mg/m ³	BS EN 14791	26/09/2014, 0806 – 0906 hrs	0.03 mg/m ³
ST9	CO	150 mg/ m ³		1 hour	23.0 mg/m ³	BS EN 15058	24/09/2014, 1039 – 1139 hrs	2.2 mg/m ³
ST9	Oxides of Nitrogen (as NO ₂)	150 mg/m ³		1 hour	14.0 mg/m ³	BS EN 14792	24/09/2014, 1039 – 1139 hrs	1.7 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed 
 (Authorised to sign as representative of Operator)

Date...19/01/15.....

Permit Number: EPR/BK6483IU/V003

Operator: Toyota Manufacturing UK Ltd

Facility: Deeside Engine Casting

Form Number: Air1e / 280709

Reporting of emissions to air for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST11	Particulate	5 mg/m ³		1 hour (avg 3x 1 hr)	0.75 mg/m ³	BS EN 13284-1	25/09/2014, 0850 – 1214 hrs	1.1 mg/m ³
ST11	Formaldehyde	7 mg/m ³		1 hour	0.06 mg/m ³	BS EN 13649	25/09/2014, 0944 - 1044 hrs	0.02 mg/m ³
ST11	Ammonia	10 mg/m ³		1 hour	0.26 mg/m ³	BS EN 14791	25/09/2014, 1059 – 1159 hrs	0.03 mg/m ³
ST11	CO	150 mg/m ³		1 hour	26.0 mg/m ³	BS EN 15058	24/09/2014, 0935 – 1035 hrs	2.1 mg/m ³
ST11	Oxides of Nitrogen (as NO ₂)	150 mg/m ³		1 hour	66.0 mg/m ³	BS EN 14792	24/09/2014, 0935 – 1035 hrs	1.8 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date..19/01/15.....

Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd
 Facility: Deeside Engine Casting Form Number: Air1f / 280709

Reporting of emissions to air for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value						
ST10	Particulate	5 mg/m ³		1 hour (avg 3x 1 hr)	0.75 mg/m ³	BS EN 13284-1	06/11/2014, 0842 - 1156 hrs	0.33 mg/m ³
ST10	Oxides of Nitrogen (as NO ₂)	150 mg/m ³		1 hour	4.0 mg/m ³	BS EN 14792	24/09/2014, 0824 - 0924 hrs	1.7 mg/m ³
ST10	CO	150 mg/m ³		1 hour	55.0 mg/m ³	BS EN 15058	24/09/2014, 0824 - 0924 hrs	2.4 mg/m ³
ST12	Particulate	5 mg/m ³		1 hour	1.9 mg/m ³	BS EN 13284-1	26/09/2014, 1352 - 1452 hrs	0.72 mg/m 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] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed  Date 19/01/15

Permit Number: EPR/BK6483IU/V003

Operator: Toyota Manufacturing UK Ltd

Facility:

Deeside Engine Casting

Form Number:

Water1 / 280709

Reporting of emissions to water (other than to sewer) and land for the year...2014

Emission Point	Substance / Parameter	Emission		Result ^[1]	Test Method ^[2]	Sample Date and Times	Uncertainty ^[3]
		Limit Value	Reference Period				
W1	Total Hydrocarbon Oil	N/A	1 Week Average as permit requirement	<0.3 mg/l	Solvent extract of the sample / GCFID	06/10/2014 - 10/10/2014	0.13 mg/l
W1	pH	N/A		7.5	Based "The Measurement of Electrical Conductivity and Laboratory Determination of the pH Value of Natural, Treated and Wastewaters 1978".	06/10/2014 - 10/10/2014	0.14
W1	COD	N/A		<5.0 mg/l	Dichromate oxidation / digestion.	06/10/2014 - 10/10/2014	0.89 mg/l
W2	Total Hydrocarbon Oil	N/A	1 Week Average as permit requirement	<0.3mg/l	Solvent extract of the sample / GCFID	06/10/2014 - 10/10/2014	0.04 mg/l
W2	pH	N/A		7.6	Based "The Measurement of Electrical Conductivity and Laboratory Determination of the pH Value of Natural, Treated and Wastewaters 1978".	06/10/2014 - 10/10/2014	0.14
W2	COD	N/A		<5.0 mg/l	Dichromate oxidation / digestion.	06/10/2014 - 10/10/2014	1.59 mg/l

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

Signed

(Authorised to sign as representative of Operator)

Date...19/09/15.....

Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd
 Facility: Deeside Engine Casting Form Number: Sewer1 / 280709

Reporting of emissions to sewer for the year ...2014

Emission Point	Substance / Parameter	Emission		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
		Limit Value						
S1	Instantaneous flow	20 m ³ per hour		Per annum	19.30 m ³ per hour	Flow meter	14/02/2014	Uncertainty is reported for accredited analysis, conducted quarterly.
S1	Daily Flow	400 m ³ per day		Per annum	149.0 m ³ per day	Flow Meter	31/07/2014	
S1	Minimum pH	5		Per annum	7.12	pH meter	18/04/2014	
S1	Maximum pH	10		Per annum	8.08	pH meter	31/01/2014	
S1	Total suspended solids	200 mg/l		Per annum	56.0 mg/l	Filter paper/balance	18/07/2014	
S1	COD	1500 mg/l		Per annum	1047.0 mg/l	Titration	25/04/2014	
S1	Total hydrocarbon oil	150 mg/l		Per annum	30.0 mg/l	Gravimetric	07/11/2014	
S1	Sulphate	1000 mg/l		Per annum	724.0 mg/l	AA spectrophotometer	20/11/2014	
S1	Copper	1 mg/l		Per annum	0.71 mg/l	AA spectrophotometer	12/09/2014	
S1	Zinc	2 mg/l		Per annum	0.68 mg/l	AA spectrophotometer	21/02/2014	
S1	Lead	1 mg/l		Per annum	0.19 mg/l	AA spectrophotometer	15/02/2014	
S1	Nickel	1 mg/l		Per annum	0.1 mg/l	AA spectrophotometer	All dates	

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



Signed

(Authorised to sign as representative of Operator)

Date 19/01/15

Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd
 Facility: Deeside Engine Casting Form Number: Waterusage1 / 280709

Reporting of Water Usage for the year ...2014

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Mains water	6538 m3/annum	0.77 m3/tonne of cast aluminium
Site borehole	N/A	
River abstraction	N/A	
TOTAL WATER USAGE	6538 m3/annum	0.77 m3/tonne of cast aluminium

Operator's comments :

To standardise consumption, the specific usage units are measured in m3/metric tonne of cast aluminium. This makes consumption units independent of engine production mix.

Site collected rain water for use on site is not counted.

Signed  Date 19/01/15
 (authorised to sign as representative of Operator)

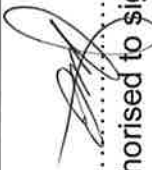
Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd

Facility: Deeside Engine Casting Form Number: performance1 / 280709

Reporting of other performance indicators for the year....2014

Parameter	Units		Result
Total raw material used		Tonnes	6,510 Tonnes
Dross removed from site		Tonnes	250.98 Tonnes
Bag filter dust		Tonnes	1.319 Tonnes (Note: >18 tonnes due for waste shipment end of 2014 held back until 2015, therefore 2014 result is low and 2015 result will be high)
Furnace linings		Tonnes	14.78Tonnes
Total swarf recycled		Tonnes	465 Tonnes
Total 3 rd party scrap recycled		Tonnes	0.0 Tonnes

Operator's comments :

Signed  Date: 19/01/15

(Authorised to sign as representative of Operator)

Permit Number: EPR/BK6483IU/V003 Operator: Toyota Manufacturing UK Ltd
 Facility: Deeside Engine Casting Form Number: energyusage1 / 280709

Reporting of Energy Usage for the year ...2014

Energy Source	Energy Usage		Primary Energy (MWh)	Specific Usage (MWh/unit output)
	Quantity			
Electricity *	7,086 MWh		18,423 MWh	2.162 MWh/tonne of cast aluminium
Natural Gas	15,036 MWh		15,036 MWh	1.765 MWh/tonne of cast aluminium
TOTAL	22,122 MWh		33,459 MWh	3.927 MWh/tonne of cast aluminium

* Conversion factor for delivered electricity to primary energy = 2.6

Operator's comments :

To standardise consumption, the specific usage units are measured per metric tonne of cast aluminium. This makes consumption units independent of engine production mix.
 Electricity is reported as Grid only, self generated electricity for the solar PV installation is not included.



Signed
 (Authorised to sign as representative of Operator)

Date: 19/09/15