

Report for Periodic Monitoring of Emissions to Atmosphere

Part 1: **Executive Summary**
Permit Number: **PPC/028**
Operator: **Atritor Limited**
Installation: **Edgewick Park Industrial Estate, Coventry**
Emission Point: **PMA 1 Main Scrubber Exhaust**
Monitoring Date: **12th July 2007**



1709



1709

Contract Reference: FTA 6350
Operator: Atritor Limited
Address: Edgewick Park Industrial Estate
Canal Road
Coventry
CV6 5RD
Monitoring Organisation: RPS Health, Safety & Environment
Address: Steadings Barn, Pury Hill Business Park, nr Alderton,
Towcester, Northamptonshire, NN12 7LS
Report Date: 8th August 2007
Report Approved By: Richard Harvey
Position: Senior Consultant
MCERTS Registration No.: MM02 020

Signature:



RPS Health, Safety and Environment has produced this report within the term of the contract with the client and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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Monitoring Objectives

At the request of Mr B. Percival of Atritor Ltd., RPS Health, Safety and Environment conducted air emission monitoring at the Edgewick Park Industrial Estate site, Coventry in July 2007.

The monitoring programme at this installation was carried out to provide data on emissions to atmosphere for comparison with the limits specified in the air emission criteria for this site.

The parameters requested for monitoring at each emission point and the actual monitoring conducted are detailed below.

Table 1

Parameters Requested to be Monitored	PMA 1 – Main Scrubber Exhaust
Total Particulate Matter	✓
Specific Requirements	Normal Operating Conditions

Notes:

- ✓ Represents the actual parameters monitored
- ✘ Represents the parameters requested but not monitored

Monitoring Results

Table 2 – Monitoring Results from the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry in July 2007

Substance Monitored	Emission Limit Value	Periodic Monitoring Result	Units	Uncertainty (mg/m ³) #	Reference Conditions 273K, 101.3kPa...	Sampling Date	Sampling Times	Monitoring Reference Method	Accreditation Status	Operating Status
Total Particulate Matter	50	16	mg/m ³	± 1.7	wet gas, without correction for oxygen	12-Jul-07	11:43 – 13:59	BS-EN 13284-1 2001	MCERTS	Normal
Linear velocity within Scrubber unit	9 (maximum)	4.6 *	m/sec	-	-	12-Jul-07	-	BS-EN 13284-1 2001	MCERTS	Normal
E-flux velocity at Stack Exhaust exit	15 (minimum)	16 @	m/sec	-	-	12-Jul-07	-	BS-EN 13284-1 2001	MCERTS	Normal

Notes:

The uncertainty associated with the quoted result is at the 95% confidence interval.

* Figure calculated from volumetric flow rate at sample plane and cross sectional area of scrubber unit.

@ Figure calculated from volumetric flow rate at sample plane and cross sectional area of duct at exit point.

Operating Information

Table 3 – Operating Information During Monitoring of the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry in July 2007

Parameter	Result
Sample Date	12-Jul-07
Process Type	Batch process 11:43 – 12:13 - Knocking out started 12:58 – 13:20 – Melting 13:20 – 13:36 – Pouring (still melting) 13:36 – 13:59 - Casting through tunnel
Process Duration	~ 2 hours
If 'Batch', was monitoring carried out over the whole batch?	Yes
If 'No', give details	-
Abatement/Operational?	Wet Scrubber / Yes
Fuel Type	N/A
Feedstock	White Iron
Load	Not Known
Throughput	Not Known
Continuous Rating	-

Monitoring Deviations

Table 4 – Monitoring Deviations During Monitoring of the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry in July 2007

Substance Deviations	Monitoring Deviations	Other Relevant Issues
N/A	N/A.	Total Particulate Matter to BS EN 13284:1 – There was a break in production between Knocking out and Melting between 12:13 & 12:58. During this time the sampling run was paused.

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Part 2: **Supporting Information**
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Emission Point: **PMA 1 Main Scrubber Exhaust**
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APPENDIX 1: General Information

Monitoring Organisation Staff Details

Table 5

Site Team	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Matt Sumner	Consultant	2	1,2,3 & 4	MM 05 622
Edwin Powell	Technician	1	1,2,3 & 4	MM 05 621

Report Author	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Carl Redgrove	Consultant	2	1, 2, 3 & 4	MM 03 173

Report Reviewer	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Richard Harvey	Senior Consultant	2	1, 2,3 & 4	MM 02 020

Monitoring Organisation Method Details

Table 6

Emission Parameter	Standard Method	Monitoring Procedure No.	Monitoring Accreditation Status	Analysis Technique	Analysis Procedure No.	Analytical Laboratory	Analysis Accreditation Status
Practical Considerations Prior to Monitoring	N/A	RPSCE/1/1	MCERTS	N/A	N/A	N/A	N/A
Gas Flows	BS-EN 13284-1:2001	RPSCE/1/2	MCERTS	N/A	N/A	N/A	N/A
Gas Temperatures	BS-EN 13284-1:2001	RPSCE/1/2	MCERTS	N/A	N/A	N/A	N/A
Total Particulate Matter	BS EN 13284-1:2001	RPSCE/1/7c	MCERTS	Gravimetric	D9	RPS Laboratories, Manchester	UKAS

APPENDIX 2: Emission Points – PMA 1 Main Scrubber Exhaust

Stack Gas Measurements

Table 7 - Temperature and Velocity Profile

Results of Gas Flows and Gas Temperatures Measured from the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry on the 13th July 2007

Traverse Point (m)	Sample Line A				Sample Line B			
	T (°C)	ΔP (mm H ₂ O)	Neg. Flow?	Spin <15°	T (°C)	ΔP (mm H ₂ O)	Neg. Flow?	Spin <15°
0.20	23	10.2	No	<15	23	20.2	No	<15
0.59	23	11.6	No	<15	23	23.2	No	<15

Barometric pressure (kPa)	100.0
Static Pressure (mm H₂O)	-ve 243
Stack Dimension (m)	0.70 x 0.79

Table 8 - Gas Measurements (continued)

Results of Total Particulate Matter and General Emission Parameters Measured from the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry in July 2007

Emission Parameter	Units	Mean Result
Sample Date	-	12-Jul-07
Sample Period	-	11:43 – 13:59
Barometric Pressure	kPa	100.0
Stack Moisture Content	%	2.1
Stack Temperature	°C	25
Internal Area Of Duct (at sampling plane)	m ²	0.553
Gas Velocity (as measured at sampling plane)	m/sec	13
Internal Area Of Duct (at exhaust exit)	m ²	0.456
Gas Velocity (at exhaust exit for e-flux velocity)	m/sec	16
Internal Area Of Duct (within main scrubber unit)	m ²	1.559
Gas Velocity (within main scrubber unit for linear velocity)	m/sec	4.6
Volumetric Flowrate (as measured)	m ³ /sec	7.2
Volumetric Flowrate (at reference conditions)	m ³ /sec*	6.4
Total Particulate Matter Mass Emission	kg/hr	0.37
Total Particulate Matter Concentration	mg/m ³ *	16

Notes:

* Reference conditions expressed as 273 K, 101.3 kPa, wet gas, without correction for oxygen.

Photograph

Photograph of PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry



Reportable Blank Results

Table 9 - Results of the Reportable Blank Concentrations for Total particulate Matter taken for the PMA 1 – Main Scrubber Exhaust at Atritor Ltd., Coventry in July 2007

Emission Parameter	Sample Date	Units*	Blank Concentration
Total Particulate Matter	12-Jul-07	mg/m ³	0.24

Notes:

* Reference conditions expressed as 273 K, 101.3 kPa, wet gas, without correction for oxygen.

Certificate of Analyses



Test Certificate

Date 20/07/2007

Client	RPS Towcester Steadings Barn Pury Hill Business Park Nr Alderton Towcester NN12 7LS	Order No.	FTA 6350
		Certificate No.	WK07-4221
		Issue No.	1

Contact	Edwin Powell	Date Received	16/07/2007
Description	2 filters & 2 solutions for TPM	Technique	Gravimetric

Sample No.	460306	025594	Method
Total particulate matter	21.78 mg		D9(U)

Sample No.	460307	T103672	Method
Total particulate matter	4.83 mg		D9(U)

Sample No.	460308	028986	Method
Total particulate matter	0.15 mg		D9(U)

Sample No.	460309	T103673	Method
Total particulate matter	<0.5 mg		D9(U)

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RPS Laboratories Ltd. Unit 12. Waters Edge Business Park. Modwen Road. Salford. M5 3EZ
Tel: (0161) 872 2443 Fax: (0161) 877 3959



Test Certificate

Date 20/07/2007

Client	RPS Towcester	Certificate No.	WK07-4221
		Issue No.	1

Tested By Catherine Weatherall Date 20/07/2007
Approved By  Date 20/07/2007
Jon Ashcroft
Senior Chemist

For and on authority of RPS Laboratories Ltd.
Standard terms and conditions are applicable, a copy is available on request.

Method Symbols (U) Analysis is UKAS Accredited
(N) Analysis is not UKAS Accredited
(S) Analysis is Subcontracted

Concentration values (mg/m³ and ppm) are provided to assist with interpretation only, they are not covered by the scope of UKAS accreditation

Analysis carried out on samples 'as received'

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