EMISSIONS MONITORING SURVEY

Prepared for:

London Taxis International Ltd
Holyhead Road
Coventry
Warwickshire
CV5 8JJ

Permit Number	: PPC037
Job Number	: P257
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Prepared by:

Environmental Compliance Limited
Unit G1
Main Avenue
Treforest Industrial Estate
Pontypridd
CF37 5YL.

Tel: 01443 841760
Fax: 01443 841761

DOCUMENT CONTROL SHEET

Report Issue:		FINAL	
Report Prepared by:		Report Reviewed & Approved by MCERTS Level Two	
Name:	Jonathan Litterick	*Name:*	Andy Barnes
		Signature:	[redacted]
Date:	19/06/09	*Date:*	19/06/09

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The monitoring at this installation was carried out in accordance with our quotation reference PC/P257/Q002, for compliance check monitoring of emissions to air. The substances requested for monitoring at each emissions point are listed below:

Substances to be monitored	**Emission Point Identification**			
	Tack Booth	Base Booth 1	Base Booth 2	Lacquer Booth 3
Particulates	• U	• U	• U	• U

Substances to be monitored	**Emission Point Identification**		
	Lacquer Booth 4	Main Combi Booth	PDI Combi Booth
Particulates	• U	• U	• U

• Denotes the substances to be monitored.

U **Denotes UKAS accreditation is held for monitoring that substance, but does not mean that it has been claimed which will depend on whether the testing could be completed in accordance with the Standard Reference Method.**

Special Requirements: *"Test While Processes are Running."*

1.1 Monitoring Results

Emission Point Reference	Substance to be Monitored	Emission Limit Value	Periodic Monitoring Result	Uncertainty %	Units	Reference Conditions 273 K, 101.3 kPa	Date of Sampling	Start and End Times	Monitoring Method Reference	Accreditation for use of Method	Tick if non-conforming test (see Section 4)	Operating Status
Tack Booth	Particulates $	10	1.38	>100	mg/m³	& wet gas	14/05/09	08:28 – 08:58	BS EN 13284-1	NU	✓	Normal 12 Taxis per day
	Particulates $	10	1.45	>100	mg/m³	& wet gas	14/05/09	09:00 – 09:33	BS EN 13284-1	NU	✓	
Basecoat Booth 1	Particulates $	10	1.10	>100	mg/m³	& wet gas	13/05/09	09:15 – 09:47	BS EN 13284-1	NU	✓	
	Particulates $	10	2.94	66	mg/m³	& wet gas	13/05/09	09:52 – 10:24	BS EN 13284-1	NU	✓	
Basecoat Booth 2	Particulates $	10	2.82	81	mg/m³	& wet gas	13/05/09	09:15 – 09:47	BS EN 13284-1	NU	✓	
	Particulates $	10	3.51	65	mg/m³	& wet gas	13/05/09	09:52 – 10:24	BS EN 13284-1	NU	✓	
Lacquer Booth 3	Particulates $	10	**11.63**	18	mg/m³	& wet gas	13/05/09	11:05 – 11:38	BS EN 13284-1	NU	✓	
	Particulates $	10	7.88	27	mg/m³	& wet gas	13/05/09	11:42 – 12:15	BS EN 13284-1	NU	✓	
Lacquer Booth 4	Particulates $	10	3.82	50	mg/m³	& wet gas	13/05/09	11:05 – 11:38	BS EN 13284-1	NU	✓	
	Particulates $	10	5.44	35	mg/m³	& wet gas	13/05/09	11:43 – 12:16	BS EN 13284-1	NU	✓	
Main Combi (Spray)	Particulates $	10	4.08	50	mg/m³	& wet gas	13/05/09	13:20 – 13:53	BS EN 13284-1	NU	✓	
Main Combi (Bake)	Particulates $	10	1.56	>100	mg/m³	& wet gas	13/05/09	14:00 – 14:33	BS EN 13284-1	NU	✓	
PDI Combi (Spray)	Particulates $	10	1.44	>100	mg/m³	& wet gas	14/05/09	10:05 – 10:38	BS EN 13284-1	NU	✓	
PDI Combi (Bake)	Particulates $	10	1.31	>100	mg/m³	& wet gas	14/05/09	10:40 – 11:13	BS EN 13284-1	NU	✓	

Notes

Emission Limit Value	The emission limit value is that stated in the permit and will be expressed as a concentration or a mass emission.
Periodic Monitoring Result	The result given is expressed in the same terms and units as the emission limit value.
Uncertainty	The uncertainty associated with the quoted result is at the 95% confidence interval.
Reference Conditions	All results are expressed at 273 K and 101.3kPa. The oxygen and moisture corrections are stated.
Monitoring Method Reference	The method stated is in accordance with the Environment Agency Technical Guidance Note M2, or other method approved by the Environment Agency.
Accreditation for use of Method	**The details indicate the accreditation for the use of the complete monitoring method, e.g. MCERTs, UKAS. If use of the method is not accredited " NA" is stated.**
Operating Status	The details indicate the feedstock and the loading rate of the plant during monitoring.
$	Chemical Analysis on sample reagents was performed by an External Laboratory as detailed in Section 3.0
NU	**UKAS Accreditation Held but UKAS Accreditation cannot be claimed for the test as sampling did not comply with the Standard Reference Method (SRM), see section 2.2 & 4.0**
NA	**Method is NOT UKAS Accredited.**

1.2 Operating Information

Emission Point Reference	Date	Process Type	Process Duration	Fuel	Feedstock	Abatement	Load	Comparison of Operator CEMS and Periodic Monitoring Results			
								Substance	CEMS Results	Periodic Monitoring Results	Units
Tack Booth	14/05/09	Batch	Various	n/a	n/a	None	Normal	-	-	-	-
Basecoat Booths	13/05/09	Batch	Various	n/a	n/a	Wet	Normal	-	-	-	-
Lacquer Booths	13/05/09	Batch	Various	n/a	n/a	Wet	Normal	-	-	-	-
Main Combi Booth	13/05/09	Batch	Various	n/a	n/a	Dry	Normal	-	-	-	-
PDI Combi Booth	14/05/09	Batch	Various	n/a	n/a	Dry	Normal	-	-	-	-

Notes:

Process Type	State whether the process is a continuous or batch process.
Process Duration	If a batch process, state the duration, frequency and details of the portion of the batch sampled. If continuous state "NA"
Fuel	If applicable, state the fuel type If not applicable state "NA"
Feedstock	State the feedstock type
Abatement	State the type and whether operational during monitoring. If not applicable state "NA"
Load	State the normal load, throughput or rating of the plant

2.0 INTRODUCTION

Environmental Compliance Ltd (ECL) was commissioned by **London Taxis International Ltd** to undertake an emission monitoring survey at their site in **Coventry.** This report presents the findings of the study.

The emissions monitoring survey was carried out by the site sampling team detailed in the table below at the request of **Mr Carl Richardson** in accordance with quotation reference, PC/P257/Q002.

Site Sampling Team

Names of Site Team	Dates on Site	MCERTS No.	LEVEL	Technical Endorsements
Andy Barnes	13 & 14/05/09	MM 03 235	2	TE1, TE2, TE3, TE4
Mike Smith		MM 03 211	2	TE1, TE2, TE3, TE4

Report Reviewer

Name	MCERTS No.	LEVEL	Technical Endorsements
Paul Calland	MM 03 212	2	TE1, TE2, TE3, TE4

Technical Endorsement Key:-

TE1 – Isokinetic Particulates, Temperature & Velocity Profiles
TE2 – Isokinetic Extractive Pollutants:- Metals, Dioxin & Furans, PAHs, PCBs, HCL, HF
TE3 – Non-Isokinetic Extractive Pollutants:- Speciated VOCs, HF, HCL, Cyanide.
TE4 – Continuous Analysers (Combustion Gases):- VOCs, CO, NOx, SO2, O2

2.1 Objectives

The objective of the survey was to measure the concentrations of pollutants from the processes / locations as detailed in the Executive Summary. This survey meets the requirements of the site's **PPC Permit Number: PPC037** where UKAS and MCERTS accreditation has and could be claimed for the testing in the monitoring results table.

2.2 Scope of Work

There were a number of deviations from the original and agreed emissions monitoring schedule these are as follows:-

Significant swirl was recorded at all sample locations & no safely accessible alternative sampling locations are available.

Non-conforming tests are as follows:-

All particulate tests from all locations deviated from the SRM for particulate matter.

3.0 SAMPLING PROTOCOLS / METHODOLOGIES

3.1 Particulates

Testing was carried out using two unheated manual stack sampling systems, with in-stack filtration, in accordance with **BS EN 13284-1 & MID** and In-house technical procedure **ECL/TPD/027.**

Isokinetic particulate sampling is achieved when the velocity of gas entering the sampling nozzle is exactly equal to the velocity of the approaching gas stream within the stack. A measured volume of sample gas is withdrawn from the stack isokinetically through a sampling nozzle and then through a pre-weighed filter positioned in a housing, where the particles are collected on the filter. Following testing the front half of the filter housing and the sample nozzle are rinsed to remove any particulate matter which, may have impacted on the surfaces during testing.

The filters and rinses are subsequently analysed to determine the amount of particulate matter captured.

RPS Laboratories (RPS) who are situated in **Manchester** carried out the analysis of the samples. **RPS** are UKAS accredited for all analysis conducted. In addition to the survey samples, a field blank is submitted as part of the technical procedure.

4.0 SAMPLE POINT DESCRIPTIONS

The sample locations that were monitored are detailed below:-

4.1 Tack Booth

Sampling takes place in a straight section of horizontal ductwork with 50cm diameter. The sample plane is after the fan, 1.0m after a bend and 1.5m before a bend. As such the sampling plane does not meet the positional *recommendations* of BSEN 13284.

Furthermore the sampling plane does not meet the flow *requirements* of the standard, as there are a number of positions on the sampling plane where the angle of gas flow is greater than 15 degrees from the duct axis. There were no alternative positions safely accessible on the test dates.

As sampling could not be carried out in accordance with the Standard Reference Method UKAS accreditation cannot be claimed for the results for Particulates even though UKAS accreditation is held for monitoring.

4.2 Basecoat Booths 1 & 2

Sampling takes place in straight sections of vertical ductwork with 120cm diameter. The sample planes are 1.0m above the fan, only one sampling line is available. As such the sampling planes do not meet the positional *recommendations* of BSEN 13284.

Furthermore the sampling planes do not meet the flow *requirements* of the standard, as there are a number of positions on the sampling planes where the angle of gas flow is greater than 15 degrees from the duct axis. There were no alternative positions safely accessible on the test dates.

As sampling could not be carried out in accordance with the Standard Reference Method UKAS accreditation cannot be claimed for the results for Particulates even though UKAS accreditation is held for monitoring.

4.3 Lacquer Booths 3 & 4

Sampling takes place in straight sections of vertical ductwork with dimensions of 120 x 120 cm. The sample planes are 150cm above the fan, two sampling lines are available. As such the sampling planes do not meet the positional *recommendations* of BSEN 13284.

Furthermore the sampling planes do not meet the flow *requirements* of the standard, as there are a number of positions on the sampling planes where the angle of gas flow is greater than 15 degrees from the duct axis. There were no alternative positions safely accessible on the test dates.

As sampling could not be carried out in accordance with the Standard Reference Method UKAS accreditation cannot be claimed for the results for Particulates even though UKAS accreditation is held for monitoring.

4.4 Main Combi Booth

Sampling takes place in a straight section of vertical ductwork with 80cm diameter. The sample plane is after the fan, 2.0m after a bend and 0.3 m before a bend. As such the sampling plane does not meet the positional *recommendations* of BSEN 13284.

Furthermore the sampling plane does not meet the flow *requirements* of the standard, as there are a number of positions on the sampling plane where the angle of gas flow is greater than 15 degrees from the duct axis. There were no alternative positions safely accessible on the test dates.

Two tests were taken, one during the spraying cycle and one during the bake cycle. The extraction switches off during the bake cycle and as a consequence the bake cycle sample is non isokinetic.

As sampling could not be carried out in accordance with the Standard Reference Method UKAS accreditation cannot be claimed for the results for Particulates even though UKAS accreditation is held for monitoring.

4.5 PDI Combi Booth

Sampling takes place in a straight section of vertical ductwork with 80cm diameter. The sample plane is after the fan, 2.5m above the fan and at least 4m before the exit. As such the sampling plane does meet the positional *recommendations* of BSEN 13284.

However the sampling plane does not meet the flow *requirements* of the standard, as there are a number of positions on the sampling plane where the angle of gas flow is greater than 15 degrees from the duct axis. There were no alternative positions safely accessible on the test dates.

Two tests were taken, one during the spraying cycle and one during the bake cycle. The extraction switches off during the bake cycle and as a consequence the bake cycle sample is non isokinetic.

As sampling could not be carried out in accordance with the Standard Reference Method UKAS accreditation cannot be claimed for the results for Particulates even though UKAS accreditation is held for monitoring.

Samples for Particulates from all locations are non-conforming tests, due to the fact that swirl was recorded at all locations in excess of the maximum 15 degrees allowed by the SRM

The Uncertainty of the reported concentrations for these pollutant results DO NOT take into account the effect of the sample location limitations.

5.0 RESULTS

The results of the survey are presented in the Tables Section.

5.1 Emissions Limit Exceedances

Most pollutants measured were below their respective authorised emission limit values with the exception of:

The recorded particulate level for Test 1 from the Lacquer Booth 3 was 11.63 mg/m^3 which is above the authorised emission limit value of 10 mg/m^3.

It should be noted that the uncertainty associated with this test results is at least 18%, meaning that the actual result lies in the range 9.5 to 13.7 mg/ m^3.

Furthermore, the average of the two test results from this stack is below the limit at 9.8 mg/ m^3.

TABLES

Table 1
Data Recorded from Paint Plant - Tack Booth

Emission Parameter	Units	Test 1	Blank
Stack Diameter	metres	0.50	...
			...
Area of Sample Plane	m^2	0.196	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	8.59	...
Gas Velocity (Reference Conditions)	m/sec*	7.77	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	1.69	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	1.53	...
Sample Date	...	14/05/2009	...
Sample Period	...	08:25 - 08:58	...
Sample Volume (as measured)	m^3	0.49	...
Sample Volume (reference Conditions)	m^3*	0.43	0.43
Isokinetic Sampling Rate	%	100.37	...
Sample Reference (ECL ID)	ECL/09	1604 & 1605	1612 & 1613
Mass of Particulate Matter Collected	mg	0.59	0.58
Concentration of Particulate Matter	mg/m^3*	1.38	1.36
Emission Rate of Particulate Matter	g/hr	7.58	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	13.57

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 2
Data Recorded from Paint Plant - Tack Booth

Emission Parameter	Units	Test 2	Blank
Stack Diameter	metres	0.50	...
			...
Area of Sample Plane	m^2	0.196	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	8.59	...
Gas Velocity (Reference Conditions)	m/sec*	7.77	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	1.69	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	1.53	...
Sample Date	...	14/05/2009	...
Sample Period	...	09:00 - 09:33	...
Sample Volume (as measured)	m^3	0.49	...
Sample Volume (reference Conditions)	m^3*	0.43	0.43
Isokinetic Sampling Rate	%	100.50	...
Sample Reference (ECL ID)	ECL/09	1606 & 1607	1612 & 1613
Mass of Particulate Matter Collected	mg	0.62	0.58
Concentration of Particulate Matter	mg/m^3*	1.45	1.35
Emission Rate of Particulate Matter	g/hr	7.94	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	13.53

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 3
Data Recorded from Paint Plant - Base Booth 1

Emission Parameter	Units	Test 1	Blank
Stack Diameter	metres	1.20	...
			...
Area of Sample Plane	m^2	1.131	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.42	...
Gas Velocity (Reference Conditions)	m/sec*	9.58	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	11.79	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	10.83	...
Sample Date	...	13/05/2009	...
Sample Period	...	09:15 - 09:47	...
Sample Volume (as measured)	m^3	0.60	...
Sample Volume (reference Conditions)	m^3*	0.53	0.53
Isokinetic Sampling Rate	%	101.60	...
Sample Reference (ECL ID)	ECL/09	1584 & 1585	1612 & 1613
Mass of Particulate Matter Collected	mg	0.58	0.58
Concentration of Particulate Matter	mg/m^3*	1.10	1.10
Emission Rate of Particulate Matter	g/hr	42.85	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	10.99

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 4
Data Recorded from Paint Plant - Base Booth 1

Emission Parameter	Units	Test 2	Blank
Stack Diameter	metres	1.20	...
			...
Area of Sample Plane	m^2	1.131	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.42	...
Gas Velocity (Reference Conditions)	m/sec*	9.58	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	11.79	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	10.83	...
Sample Date	...	13/05/2009	...
Sample Period	...	09:52 - 10:24	...
Sample Volume (as measured)	m^3	0.59	...
Sample Volume (reference Conditions)	m^3*	0.52	0.52
Isokinetic Sampling Rate	%	99.68	...
Sample Reference (ECL ID)	ECL/09	1586 & 1587	1612 & 1613
Mass of Particulate Matter Collected	mg	1.52	0.58
Concentration of Particulate Matter	mg/m^3*	**2.94**	1.12
Emission Rate of Particulate Matter	g/hr	114.48	...
Expanded Uncertainty (% Relative)	%	66	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.20

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 5
Data Recorded from Paint Plant - Base Booth 2

Emission Parameter	Units	Test 1	Blank
Stack Diameter	metres	1.20	...
			...
Area of Sample Plane	m^2	1.131	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	8.67	...
Gas Velocity (Reference Conditions)	m/sec*	7.92	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	9.80	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	8.95	...
Sample Date	...	13/05/2009	...
Sample Period	...	09:15 - 09:47	...
Sample Volume (as measured)	m^3	0.50	...
Sample Volume (reference Conditions)	m^3*	0.44	0.44
Isokinetic Sampling Rate	%	102.37	...
Sample Reference (ECL ID)	ECL/09	1588 & 1589	1612 & 1613
Mass of Particulate Matter Collected	mg	1.24	0.58
Concentration of Particulate Matter	mg/m^3*	**2.82**	1.32
Emission Rate of Particulate Matter	g/hr	90.87	...
Expanded Uncertainty (% Relative)	%	81	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	13.19

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 6
Data Recorded from Paint Plant - Base Booth 2

Emission Parameter	Units	Test 2	Blank
Stack Diameter	metres	1.20	...
			...
Area of Sample Plane	m^2	1.131	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	8.67	...
Gas Velocity (Reference Conditions)	m/sec*	7.92	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	9.80	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	8.95	...
Sample Date	...	13/05/2009	...
Sample Period	...	09:52 - 10:24	...
Sample Volume (as measured)	m^3	0.50	...
Sample Volume (reference Conditions)	m^3*	0.44	0.44
Isokinetic Sampling Rate	%	102.09	...
Sample Reference (ECL ID)	ECL/09	1590 & 1591	1612 & 1613
Mass of Particulate Matter Collected	mg	1.54	0.58
Concentration of Particulate Matter	mg/m^3*	**3.51**	1.32
Emission Rate of Particulate Matter	g/hr	113.18	...
Expanded Uncertainty (% Relative)	%	65	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	13.22

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 7
Data Recorded from Paint Plant - Lacquer Booth 3

Emission Parameter	Units	Test 1	Blank
Duct Length	metres	1.20	...
Duct Width	metres	1.20	...
Area of Sample Plane	m^2	1.440	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	9.67	...
Gas Velocity (Reference Conditions)	m/sec*	8.80	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	13.93	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	12.66	...
Sample Date	...	13/05/2009	...
Sample Period	...	11:05 - 11:38	...
Sample Volume (as measured)	m^3	0.55	...
Sample Volume (reference Conditions)	m^3*	0.47	0.47
Isokinetic Sampling Rate	%	98.19	...
Sample Reference (ECL ID)	ECL/09	1592 & 1593	1612 & 1613
Mass of Particulate Matter Collected	mg	5.50	0.58
Concentration of Particulate Matter	mg/m^3*	**11.63**	1.23
Emission Rate of Particulate Matter	g/hr	530.37	...
Expanded Uncertainty (% Relative)	%	18	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	12.27

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 8
Data Recorded from Paint Plant - Lacquer Booth 3

Emission Parameter	Units	Test 2	Blank
Duct Length	metres	1.20	...
Duct Width	metres	1.20	...
Area of Sample Plane	m^2	1.440	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	9.67	...
Gas Velocity (Reference Conditions)	m/sec*	8.80	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	13.93	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	12.66	...
Sample Date	...	13/05/2009	...
Sample Period	...	11:42 - 12:15	...
Sample Volume (as measured)	m^3	0.55	...
Sample Volume (reference Conditions)	m^3*	0.47	0.47
Isokinetic Sampling Rate	%	98.32	...
Sample Reference (ECL ID)	ECL/09	1594 & 1595	1612 & 1613
Mass of Particulate Matter Collected	mg	3.73	0.58
Concentration of Particulate Matter	mg/m^3*	7.88	1.22
Emission Rate of Particulate Matter	g/hr	359.11	...
Expanded Uncertainty (% Relative)	%	27	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	12.25

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 9
Data Recorded from Paint Plant - Lacquer Booth 4

Emission Parameter	Units	Test 1	Blank
Duct Length	metres	1.20	...
Duct Width	metres	1.20	...
Area of Sample Plane	m^2	1.440	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.75	...
Gas Velocity (Reference Conditions)	m/sec*	9.77	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	15.48	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	14.07	...
Sample Date	...	13/05/2009	...
Sample Period	...	11:05 - 11:38	...
Sample Volume (as measured)	m^3	0.60	...
Sample Volume (reference Conditions)	m^3*	0.52	0.52
Isokinetic Sampling Rate	%	97.91	...
Sample Reference (ECL ID)	ECL/09	1596 & 1597	1612 & 1613
Mass of Particulate Matter Collected	mg	2.00	0.58
Concentration of Particulate Matter	mg/m^3*	3.82	1.11
Emission Rate of Particulate Matter	g/hr	193.68	...
Expanded Uncertainty (% Relative)	%	50	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.09

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 10
Data Recorded from Paint Plant - Lacquer Booth 4

Emission Parameter	Units	Test 2	Blank
Duct Length	metres	1.20	...
Duct Width	metres	1.20	...
Area of Sample Plane	m^2	1.440	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.75	...
Gas Velocity (Reference Conditions)	m/sec*	9.77	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	15.48	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	14.07	...
Sample Date	...	13/05/2009	...
Sample Period	...	11:43 - 12:16	...
Sample Volume (as measured)	m^3	0.61	...
Sample Volume (reference Conditions)	m^3*	0.53	0.53
Isokinetic Sampling Rate	%	98.82	...
Sample Reference (ECL ID)	ECL/09	1598 & 1599	1612 & 1613
Mass of Particulate Matter Collected	mg	2.87	0.58
Concentration of Particulate Matter	mg/m^3*	5.44	1.10
Emission Rate of Particulate Matter	g/hr	275.81	...
Expanded Uncertainty (% Relative)	%	35	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.00

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 11
Data Recorded from Paint Plant - Main Combi Booth

Emission Parameter	Units	Test 1	Blank
Stack Diameter	metres	0.80	...
			...
Area of Sample Plane	m^2	0.503	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.03	...
Gas Velocity (Reference Conditions)	m/sec*	9.12	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	5.04	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	4.59	...
Sample Date	...	13/05/2009	...
Sample Period	...	13:20 - 13:53	...
Sample Volume (as measured)	m^3	0.56	...
Sample Volume (reference Conditions)	m^3*	0.49	0.49
Isokinetic Sampling Rate	%	98.38	...
Sample Reference (ECL ID)	ECL/09	1600 & 1601	1612 & 1613
Mass of Particulate Matter Collected	mg	2.00	0.58
Concentration of Particulate Matter	mg/m^3*	**4.08**	1.18
Emission Rate of Particulate Matter	g/hr	67.32	...
Expanded Uncertainty (% Relative)	%	50	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.83

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 12
Data Recorded from Paint Plant - Main Combi Booth

Emission Parameter	Units	Test 2	Blank
Stack Diameter	metres	0.80	...
			...
Area of Sample Plane	m^2	0.503	...
Stack Temperature	°C	...	...
Gas Velocity (at Stack Conditions)	m/sec	...	...
Gas Velocity (Reference Conditions)	m/sec*	...	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	...	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	...	...
Sample Date	...	13/05/2009	...
Sample Period	...	14:00 - 14:33	...
Sample Volume (as measured)	m^3	0.57	...
Sample Volume (reference Conditions)	m^3*	0.50	0.50
Sample Reference (ECL ID)	ECL/09	1602 & 1603	1612 & 1613
Mass of Particulate Matter Collected	mg	0.78	0.58
Concentration of Particulate Matter	mg/m^3*	**1.56**	1.16
Emission Rate of Particulate Matter	g/hr	...	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.60

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 13
Data Recorded from Paint Plant - PDI Combi Booth

Emission Parameter	Units	Test 1	Blank
Stack Diameter	metres	0.80	...
			...
Area of Sample Plane	m^2	0.503	...
Stack Temperature	°C	25	...
Gas Velocity (at Stack Conditions)	m/sec	10.44	...
Gas Velocity (Reference Conditions)	m/sec*	9.43	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	5.25	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	4.74	...
Sample Date	...	14/05/2009	...
Sample Period	...	10:05 - 10:38	...
Sample Volume (as measured)	m^3	0.62	...
Sample Volume (reference Conditions)	m^3*	0.54	0.54
Isokinetic Sampling Rate	%	103.72	...
Sample Reference (ECL ID)	ECL/09	1608 & 1609	1612 & 1613
Mass of Particulate Matter Collected	mg	0.77	0.58
Concentration of Particulate Matter	mg/m^3*	**1.44**	1.08
Emission Rate of Particulate Matter	g/hr	24.51	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	10.82

*Reference Conditions (273K, 101.3kPa, Wet Gas)

Table 14
Data Recorded from Paint Plant - PDI Combi Booth

Emission Parameter	Units	Test 2	Blank
Stack Diameter	metres	0.80	...
			...
Area of Sample Plane	m^2	0.503	...
Stack Temperature	°C	...	...
Gas Velocity (at Stack Conditions)	m/sec	...	...
Gas Velocity (Reference Conditions)	m/sec*	...	...
Volumetric Flowrate (Stack Conditions)	m^3/sec	...	...
Volumetric Flowrate (Reference Conditions))	m^3/sec*	...	...
Sample Date	...	14/05/2009	...
Sample Period	...	10:40 - 11:13	...
Sample Volume (as measured)	m^3	0.61	...
Sample Volume (reference Conditions)	m^3*	0.53	0.53
Sample Reference (ECL ID)	ECL/09	1610 & 1611	1612 & 1613
Mass of Particulate Matter Collected	mg	0.69	0.58
Concentration of Particulate Matter	mg/m^3*	1.31	1.10
Emission Rate of Particulate Matter	g/hr	...	...
Expanded Uncertainty (% Relative)	%	>100	...
Emission Limit Value (ELV)	mg/m^3*	10	...
Blank Concentration as Percentage of ELV	%	...	11.04

*Reference Conditions (273K, 101.3kPa, Wet Gas)

VELOCITY TRAVERSE PROFILES

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	14/05/2009

Company	LTI	Stack Diameter (mm)	500	Pitot tube coefficient	1
Site	Coventry	Port Length (mm)	0	Pitot ID	411
Location	Paint Plant	Duct Length (mm) A		Thermocouple ID	466
Stack	Tack Booth	Duct width (mm) B		Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1000	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	3	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	25	A	25.0	45.0	20	B	25.0	20.0	20
	75	A	25.0	45.0	20	B	25.0	25.0	20
	125	A	25.0	40.0	20	B	25.0	30.0	20
	175	A	25.0	35.0	20	B	25.0	35.0	20
	225	A	25.0	35.0	15	B	25.0	40.0	15
	275	A	25.0	35.0	15	B	25.0	40.0	15
	325	A	25.0	40.0	20	B	25.0	45.0	20
	375	A	25.0	45.0	20	B	25.0	50.0	20
	425	A	25.0	45.0	20	B	25.0	55.0	20
	475	A	25.0	45.0	20	B	25.0	60.0	20
Total			250				250		
Max			25	45.0			25	60.0	
Min			25	35.0			25	20.0	
Average			25.0	41.0			25.00	40.00	

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	3:1
Average deviation of flow from axis <15°	>15
X-sectional area for stacks= πr^2	0.20 m^2
X-sectional area for ducts = L x B	m^2
Suitablity of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	8.40	m/sec
Gas Velocity (Reference Conditions)	7.60	m/sec*
Volumetric Flowrate (as Measured)	1.65	m^3/sec
Volumetric Flowrate (Reference Conditions)	1.49	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct

See Description in Section 4 of report

15mm holes

Comments

Swirl exceeds 15 degrees.

	Type	Distance m
Nearest downstream disturbance	Bend	1
Nearest upstream disturbance	Bend	1.5

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	13/05/2009

Company	LTI	Stack Diameter (mm)	1200	Pitot tube coefficient	1
Site	Coventry	Port Length (mm)		Pitot ID	488
Location	Paint Plant	Duct Length (mm) A		Thermocouple ID	466
Stack	Base Booth 1	Duct width (mm) B		Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1005	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	115	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	80	A	25.0	140.0	45				
	180	A	25.0	95.0	45				
	300	A	25.0	65.0	45				
	420	A	25.0	45.0	25				
	540	A	25.0	28.0	15				
	660	A	25.0	10.0	15				
	780	A	25.0	25.0	15				
	900	A	25.0	35.0	25				
	1020	A	25.0	60.0	35				
	1140	A	25.0	55.0	45				
Total			250						
Max			25	140.0					
Min			25	10.0					
Average			25.0	54.8					

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	
Average deviation of flow from axis <15[D]	>30
X-sectional area for stacks= πr^2	1.13 m^2
X-sectional area for ducts = L x B	m^2
Suitablity of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	9.26	m/sec
Gas Velocity (Reference Conditions)	8.51	m/sec*
Volumetric Flowrate (as Measured)	10.48	m^3/sec
Volumetric Flowrate (Reference Conditions)	9.63	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct

See Description in Section 4 of report

15mm diameter port.

Comments

† Line only, swirl exceeds 15 degrees and highest to lowest ratio exceeds 9:1

	Type	Distance m
Nearest downstream disturbance	Fan	1.2
Nearest upstream disturbance	Roof	1.2

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	13/05/2009

Company	LTI	Stack Diameter (mm)	1200	Pitot tube coefficient	1
Site	Coventry	Port Length (mm)		Pitot ID	488
Location	Paint Plant	Duct Length (mm) A		Thermocouple ID	466
Stack	Base Booth 2	Duct width (mm) B		Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1005	Barometer Id	629
Operators	MS/AB	Static Pressure. (mm H_2O)	53	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	80	A	25.0	95.0	45				
	180	A	25.0	75.0	55				
	300	A	25.0	65.0	45				
	420	A	25.0	40.0	30				
	540	A	25.0	25.0	25				
	660	A	25.0	10.0	15				
	780	A	25.0	15.0	15				
	900	A	25.0	25.0	25				
	1020	A	25.0	40.0	40				
	1140	A	25.0	75.0	50				
Total			250						
Max			25	95.0					
Min			25	10.0					
Average			25.0	46.5					

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	
Average deviation of flow from axis <15°	>30
X-sectional area for stacks= πr^2	1.13 m^2
X-sectional area for ducts = L x B	m^2
Suitability of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	8.58	m/sec
Gas Velocity (Reference Conditions)	7.84	m/sec*
Volumetric Flowrate (as Measured)	9.70	m^3/sec
Volumetric Flowrate (Reference Conditions)	8.86	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct
See Description in Section 4 of report

15mm diameter port.

Comments

1 Line only, swirl exceeds 15 degrees and highest to lowest ratio exceeds 9:1

	Type	Distance m
Nearest downstream disturbance	Fan	1.2
Nearest upstream disturbance	Roof	1.2

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	13/05/2009

Company	LTI	Stack Diameter (mm)		Pitot tube coefficient	1
Site	Coventry	Port Length (mm)	90	Pitot ID	488
Location	Paint Plant	Duct Length (mm) A	1200	Thermocouple ID	466
Stack	Laquer Booth 3	Duct width (mm) B	1200	Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1005	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	4	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	60	A	25.0	95.0	25	B	25.0	105.0	25
	180	A	25.0	75.0	25	B	25.0	90.0	25
	300	A	25.0	65.0	25	B	25.0	75.0	25
	420	A	25.0	40.0	25	B	25.0	65.0	25
	540	A	25.0	25.0	20	B	25.0	50.0	20
	660	A	25.0	10.0	20	B	25.0	45.0	20
	780	A	25.0	15.0	25	B	25.0	35.0	25
	900	A	25.0	25.0	25	B	25.0	25.0	25
	1020	A	25.0	40.0	25	B	25.0	25.0	25
	1140	A	25.0	75.0	25	B	25.0	25.0	25
Total			250				250		
Max			25	95.0			25	105.0	
Min			25	10.0			25	25.0	
Average			25.0	46.5			25.00	54.00	

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	
Average deviation of flow from axis <15°	>20
X-sectional area for stacks= πr^2	m^2
X-sectional area for ducts = L x B	1.440 m^2
Suitablity of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	9.02	m/sec
Gas Velocity (Reference Conditions)	8.20	m/sec*
Volumetric Flowrate (as Measured)	12.99	m^3/sec
Volumetric Flowrate (Reference Conditions)	11.81	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct
See Description in Section 4 of report

4" Ports but laquer build up behind restricts hole to 2" max

Comments

Swirl Exceeds 15 degrees, pitot ratio exceeds 9:1

	Type	Distance m
Nearest downstream disturbance	Fan	1.5
Nearest upstream disturbance	Roof	1.5

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	13/05/2009

Company	LTI	Stack Diameter (mm)		Pitot tube coefficient	1
Site	Coventry	Port Length (mm)	90	Pitot ID	488
Location	Paint Plant	Duct Length (mm) A	1200	Thermocouple ID	466
Stack	Laquer Booth 4	Duct width (mm) B	1200	Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1005	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	4	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	60	A	25.0	150.0	25	B	25.0	140.0	25
	180	A	25.0	130.0	25	B	25.0	120.0	25
	300	A	25.0	100.0	25	B	25.0	100.0	25
	420	A	25.0	85.0	25	B	25.0	80.0	25
	540	A	25.0	70.0	20	B	25.0	60.0	20
	660	A	25.0	60.0	15	B	25.0	60.0	15
	780	A	25.0	55.0	20	B	25.0	40.0	20
	900	A	25.0	40.0	25	B	25.0	30.0	25
	1020	A	25.0	30.0	25	B	25.0	20.0	25
	1140	A	25.0	20.0	25	B	25.0	20.0	25
Total			250				250		
Max			25	150.0			25	140.0	
Min			25	20.0			25	20.0	
Average			25.0	74.0			25.00	67.00	

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	7.5:1
Average deviation of flow from axis <15°	>20
X-sectional area for stacks= πr^2	m^2
X-sectional area for ducts = L x B	1.440 m^2
Suitabilty of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	10.65	m/sec
Gas Velocity (Reference Conditions)	9.69	m/sec*
Volumetric Flowrate (as Measured)	15.34	m^3/sec
Volumetric Flowrate (Reference Conditions)	13.95	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct

See Description in Section 4 of report

4" Ports but laquer build up behind restricts hole to 2" max

Comments

Swirl Exceeds 15 degrees, pitot ratio exceeds 9:1

	Type	Distance m
Nearest downstream disturbance	Fan	1.5
Nearest upstream disturbance	Roof	1.5

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	13/05/2009

Company	LTI	Stack Diameter (mm)	800	Pitot tube coefficient	1
Site	Coventry	Port Length (mm)	90	Pitot ID	488
Location	Paint Plant	Duct Length (mm) A		Thermocouple ID	466
Stack	Main Combi Booth	Duct width (mm) B		Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1005	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	4	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	54	A	25.0	60.0	40	B	25.0	80.0	40
	120	A	25.0	55.0	40	B	25.0	65.0	40
	200	A	25.0	40.0	35	B	25.0	50.0	30
	280	A	25.0	20.0	30	B	25.0	40.0	20
	360	A	25.0	20.0	20	B	25.0	20.0	15
	440	A	25.0	25.0	15	B	25.0	20.0	15
	520	A	25.0	35.0	20	B	25.0	35.0	20
	600	A	25.0	45.0	30	B	25.0	45.0	30
	680	A	25.0	60.0	35	B	25.0	60.0	40
	746	A	25.0	80.0	40	B	25.0	65.0	40
Total			250				250		
Max			25	80.0			25	80.0	
Min			25	20.0			25	20.0	
Average			25.0	44.0			25.00	48.00	

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	4:1
Average deviation of flow from axis <15°	>30
X-sectional area for stacks= πr^2	0.50 m^2
X-sectional area for ducts = L x B	m^2
Suitability of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	8.79	m/sec
Gas Velocity (Reference Conditions)	7.99	m/sec*
Volumetric Flowrate (as Measured)	4.42	m^3/sec
Volumetric Flowrate (Reference Conditions)	4.02	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct

See Description in Section 4 of report

4 inch ports

Test 1 is spraying - Isokinetic sample.

Test 2 is bake cycle - fan is off - non isokinetic sample.

Comments

Swirl exceeds 15 degrees.

	Type	Distance m
Nearest downstream disturbance	Bend	2
Nearest upstream disturbance	Bend	0.3

Disturbances are classed as bends, fans or diameter variations

Environmental Compliance Limited	Traverse Data Profoma	Date of Measurement	14/05/2009

Company	LTI	Stack Diameter (mm)	800	Pitot tube coefficient	1
Site	Coventry	Port Length (mm)	0	Pitot ID	488
Location	Paint Plant	Duct Length (mm) A		Thermocouple ID	466
Stack	PDI Combi Booth	Duct width (mm) B		Thermocouple Reader ID	431
Job No	P 257	Barometric Pressure. (mb)	1000	Barometer Id	629
Operators	MS/ AB	Static Pressure. (mm H_2O)	-5	Manometer ID	356

	Distance to Point (mm)	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference	Port	Temp. (°C)	(ΔP) (Pa)	Swirl Test ° From Reference
	54	A	25.0	40.0	20	B	25.0	40.0	20
	120	A	25.0	50.0	25	B	25.0	45.0	25
	200	A	25.0	65.0	25	B	25.0	60.0	25
	280	A	25.0	75.0	25	B	25.0	55.0	25
	360	A	25.0	80.0	20	B	25.0	70.0	20
	440	A	25.0	80.0	15	B	25.0	80.0	15
	520	A	25.0	70.0	20	B	25.0	85.0	20
	600	A	25.0	60.0	25	B	25.0	90.0	25
	680	A	25.0	60.0	25	B	25.0	95.0	25
	746	A	25.0	60.0	25	B	25.0	100.0	25
Total			250				250		
Max			25	80.0			25	100.0	
Min			25	40.0			25	40.0	
Average			25.0	64.0			25.00	71.00	

Average temp (K)	298

Suitability of Sampling Position	Actual Stack Conditons
Permitted highest:lowest flow pressure ratio =9:1	2.5:1
Average deviation of flow from axis <16°	>20
X-sectional area for stacks= πr^2	0.50 m^2
X-sectional area for ducts = L x B	m^2
Suitability of Position for Sampling	No

Stack Moisture		%
Measured Oxygen		%
Measured Carbon Dioxide		%
Dry Gas Molecular Weight	28	g/g mole

Gas Velocity (as Measured)	10.84	m/sec
Gas Velocity (Reference Conditions)	9.79	m/sec*
Volumetric Flowrate (as Measured)	5.45	m^3/sec
Volumetric Flowrate (Reference Conditions)	4.92	m^3/sec*

*Reference Conditions: 273K, 101.3kPa, Wet Gas

Diagram of Cross Section of Stack/Duct

See Description in Section 4 of report

15mm holes

Test 1 is spraying - Isokinetic sample.

Test 2 is bake cycle - fan is off - non isokinetic sample.

Comments

Swirl exceeds 15 degrees.

	Type	Distance m
Nearest downstream disturbance	Fan	2.5
Nearest upstream disturbance	Roof	4

Disturbances are classed as bends, fans or diameter variations

EQUIPMENT IDs

EQUIPMENT USED
(To be completed ON SITE IN FULL, circle equipment id used where necessary or delete not used)

Equipment	Equip. Type	ID No:	ID No:	ID No:	ID No:	ID No:	ID No:
MST console/pump	E001						
MST Nozzle set							
MST "S" Type Pitot							
MST Probe							
MST Hot Box							
MST Impinger							
Barometer		629					
Site Balance							
Site Check weights							
Site Check weights							
Horiba	E002						
Heated Probe							
Chiller							
Sonimix							
Heated Line							
FID	E003						
Heated Line							
Testo	E004						
FTIR	E005						
Heated Probe							
Heated Line							
Stackmite	E006	366	367				
"L" Type Pitot		488	411	487			
Digital Manometer		356					
Stack Thermocouple		466					
Thermocouple Reader		431					
Nozzle Set		Non	UKAS	A & B			