

RPS Health, Safety and Environment
Steadings Barn
Pury Hill Business Park
Nr Alderton
Towcester
Northants NN12 7LS

Report Date: 24th October 2005
Report Ref: FTA 4481



1709 Group



1709 Group

GLYNWED PIPE SYSTEMS LIMITED

Report on Air Emission Monitoring at
HUNTINGDON
CAMBRIDGESHIRE
SEPTEMBER 2005

Report for Periodic Monitoring of Emissions to Atmosphere

Part 2: Supporting Information

Permit Number: 22/93/A

Operator: Glynwed Pipe Systems Limited

Installation: Huntingdon, Cambridgeshire

Emission Point: Fluidised Bed Exhaust

Monitoring Date(s): 20th September 2005



1709 Group



THE ENVIRONMENT AGENCY'S
MONITORING CERTIFICATION SCHEME

1709 Group

Contract Reference: FTA 4481

Operator: Glynwed Pipe Systems Limited

Address: St Peters Road
Huntingdon
Cambridgeshire
PE29 7DA

Monitoring Organisation: RPS Health, Safety & Environment

Address: Steading's Barn, Pury Hill Business Park, nr Alderton, Towcester,
Northamptonshire, NN12 7LS

Report Date: 24th October 2005

Report Approved By: Martin Johnson

Position: Technical Manager

MCERTS Registration No.: MM 03 168

Signature:

A handwritten signature in black ink, appearing to read 'Martin Johnson'.

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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APPENDIX 1: General Information

Monitoring Organisation Staff Details

Table 5

Site Team	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Duncan Stewart	Project Manager	2	1 & 2	MM 03 174
Peter O'Connor	Technician	Trainee	-	MM 05 620

Report Author	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Duncan Stewart	Project Manager	2	1 & 2	MM 03 174

Report Reviewer	Position	MCERTS Level	Technical Endorsements	MCERTS Registration Number
Martin Johnson	Technical Director	2	1	MM 03 168

Monitoring Organisation Method Details

Table 6

Emission Parameter	Standard Method	Monitoring Procedure No.	Monitoring Accreditation	Analysis	Analysis Procedure No.	Analytical Laboratory	Analysis Accreditation
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
TOCs (as total organic carbon)	BS EN 12619:1999	RPSCE/1/4b	-	FID	N/A	N/A	N/A
TPM	BS-EN 13284-1:2001	RPSCE/1/7c	MCERTS	Gravimetric	D9	RPS Laboratories, Manchester	UKAS

Table 8 - Temperature and Velocity Profile

Results of Gas Flows and Gas Temperatures Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Limited, Huntingdon, Cambridgeshire on the 20th September 2005

Traverse Point (m)	Sample Plane A				Sample Plane B			
	T (°C)	ΔP (mm H ₂ O)	Neg. Flow?	Spin <15°	T (°C)	ΔP (mm H ₂ O)	Neg. Flow?	Spin <15°

APPENDIX 2: Emission Point: Fluidised Bed Exhaust

Table 9 - Gas Measurements (continued)

Results of Total Particulate Matter and General Emission Parameters Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Limited, Huntingdon, Cambridgeshire in September 2005

Emission Parameter	Units	Mean Result
Sample Date	-	20-Sep-05
Sample Period	-	13:00 – 14:04
Barometric Pressure	kPa	103.6
Internal Area Of Duct	m ²	0.33
Stack Moisture Content	%	1.0
Stack Temperature	°C	114
Gas Velocity (as measured at sampling plane)	m/sec	15
Volumetric Flowrate (as measured)	m ³ /sec	5.0
Volumetric Flowrate (at reference conditions)	m ³ /sec*	3.6
Total Particulate Matter Mass Emission	kg/hr	0.078
Total Particulate Matter Concentration	mg/m ³ *	6.0

Notes:

* Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.

Table 10 - Gas Measurements (continued)

**Results of Total Organic Compounds (as total organic carbon excluding particulate matter)
Concentration Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Limited,
Huntingdon, Cambridgeshire in September 2005**

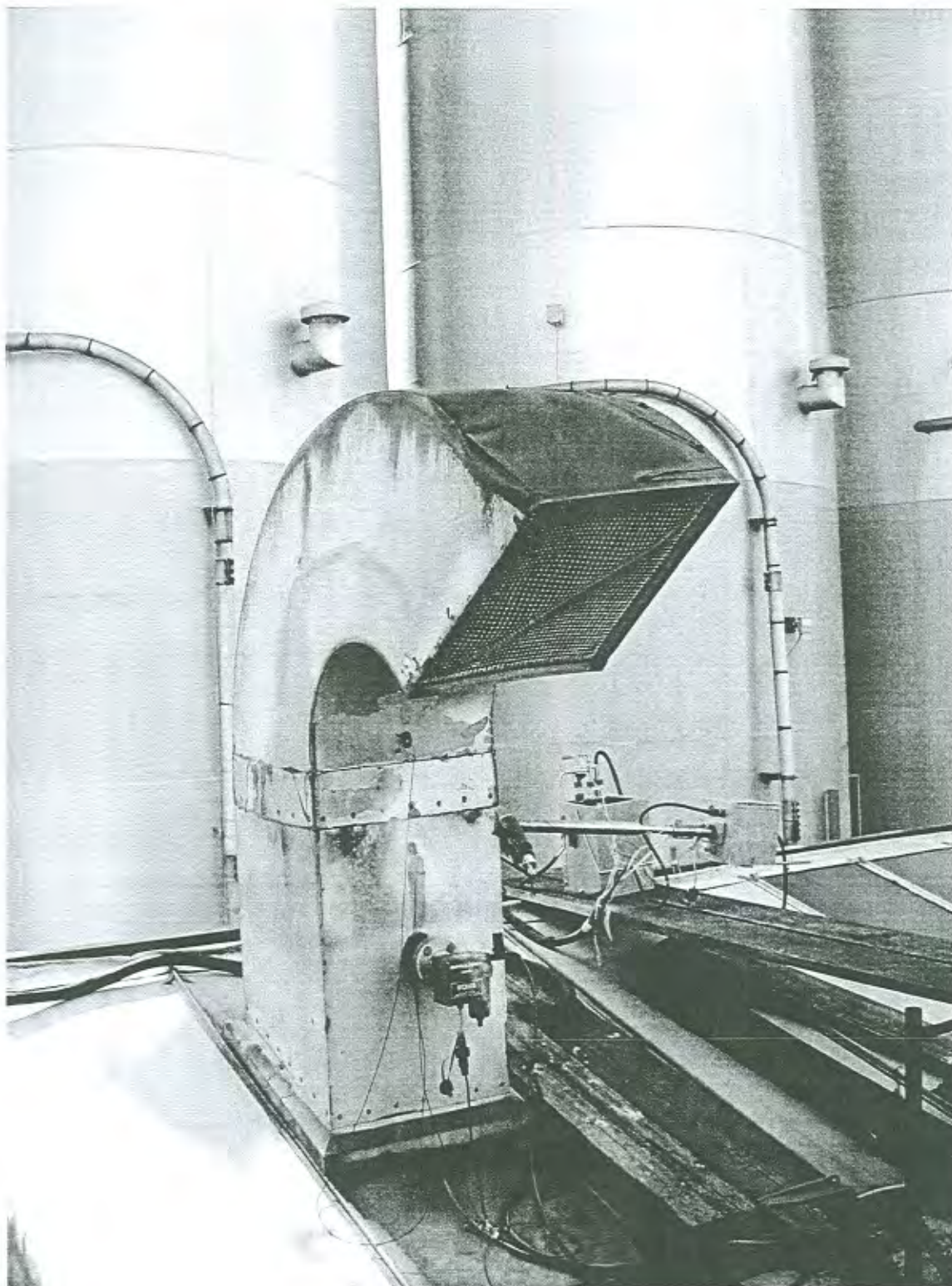
Sample Date	Sample Period	Units		TOCs (as total organic carbon)
20-Sep-05	13:00 – 14:00	mg/m ³	Maximum	42
			Mean	26

Notes:

* Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.

Photograph

Photograph of Fluidised Bed Exhaust at Glynwed Pipe Systems Limited, Huntingdon, Cambridgeshire

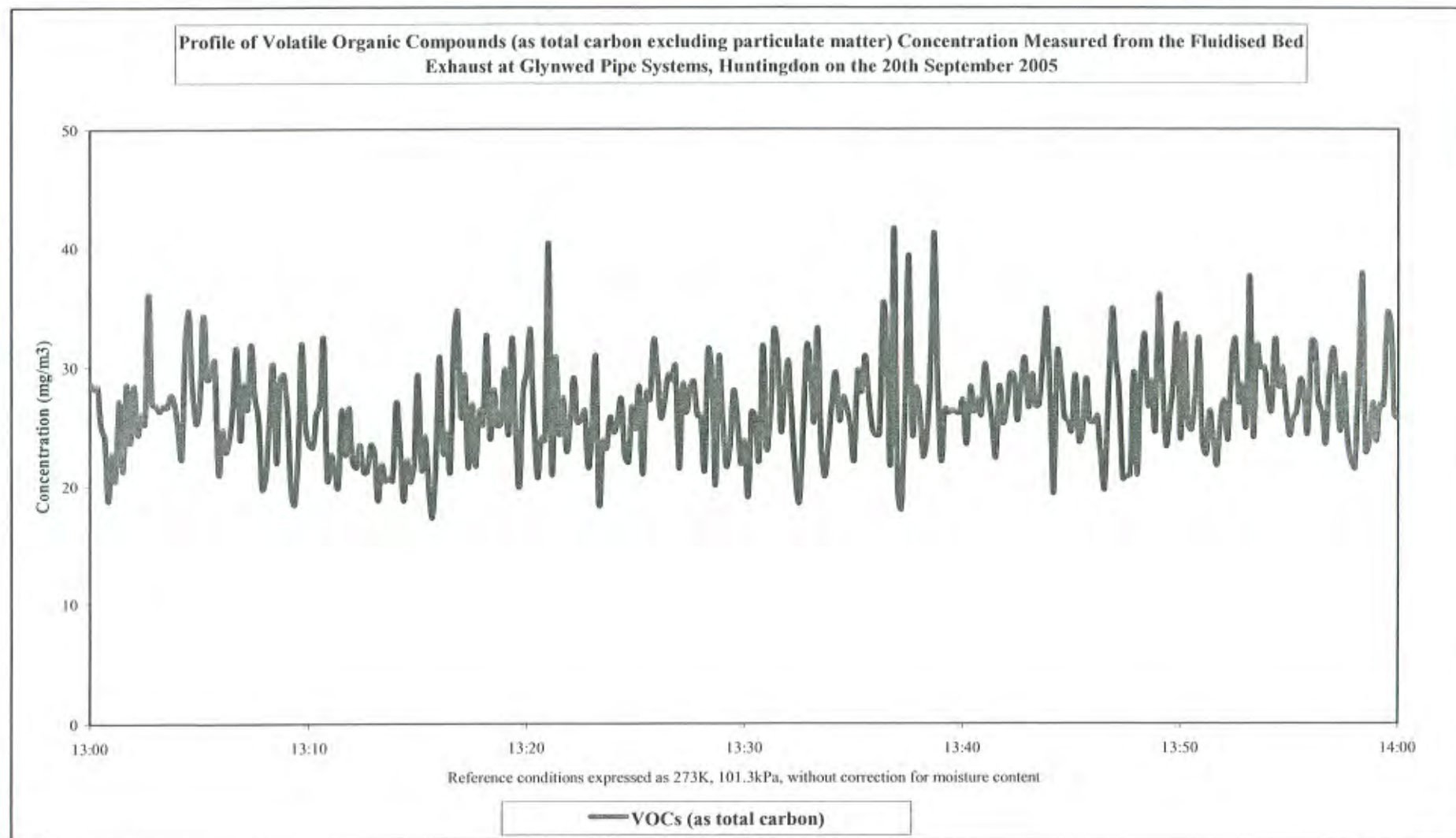


Reportable Blank Results

Table 18 - Results of the Reportable Blank Concentrations for Total particulate Matter, taken for the Fluidised Bed Exhaust at Glynwed Pipe Systems, Huntingdon, Cambridgeshire in September 2005

Emission Parameter	Sample Date	Units	Blank Concentration
Total Particulate Matter	20-Sep-05	mg/m ³	<0.60

Monitoring Profiles

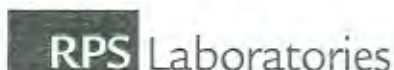


Instrumental Gas Analyser - Site Calibration Measurements

Table 16

Equipment Name	Equipment ID Number	Span Gas Type	Span Gas Concentration	Span Result	Zero Result
Sick Maihak 3006 FID	00915	C ₃ H ₈	31.1 ppm	31.7 ppm	0.075 ppm

Certificate of Analyses



RPS Laboratories, Unit 12, Waters Edge Business Park, Modwen Road, Salford, M6 3E2
Tel: (0161) 872 2443, Fax: (0161) 877 3959

Test Certificate

RPS CONSULTANTS
STEADINGS BARN
PURY HILL BUSINESS PARK
NR ALDERTON
TOWCESTER
NN12 7LS

CRT No 044854 : Issue 1
Ord No FTA4481

Date Tested 04/10/05
Date Reported 04/10/05

Attn: DUNCAN STEWART

Item - 4 SAMPLES FOR TPM

Specification- Not Applicable

Total particulate		- In-House Method D9	
Sample	Description	Result	Comments
01:379436	004878	3.03 mg	NtI
02:379437	T107578	3.7 mg	NtI
03:379438	004877	<0.1 mg	NtI
04:379439	T107579	<0.5 mg	NtI

Certificate Comments

Date of sample receipt: 26/09/2005

If you have any queries regarding this analysis please do not hesitate to contact the Laboratory Manager, Joanne Dewhurst.

Analysis was carried out on the samples 'as received'.

Standard terms and conditions are applicable, a copy is available on request.

Tested by Catherine Weatherall
Joanne Dewhurst

For and on authority of
RPS Laboratories

RPS Health, Safety and Environment
Steadings Barn
Pury Hill Business Park
Nr Alderton
Towcester
Northants NN12 7LS

Report Date: 1st April 2005
Report Ref: FTA 4480



GLYNWED PIPE SYSTEMS LTD

Report on Air Emission Monitoring at
Glynwed Pipe Systems Ltd
Huntingdon, Cambridgeshire
April 2005

Prepared by:	Duncan Stewart
Signed:	
Position:	Project Manager
Reviewed by:	Brett Durden
Signed:	
Position:	Technical Director

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.

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GLYNWED PIPE SYSTEMS LTD

Report on Air Emission Monitoring at
Glynwed Pipe Systems Ltd
Huntingdon, Cambridgeshire
April 2005

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1.0 INTRODUCTION

At the request of Mr E. Cross of Glynwed Pipe Systems Ltd., RPS Health, Safety and Environment conducted air emission monitoring at the St. Peters Road site, Huntingdon in March 2005.

The purpose of the monitoring programme was to provide data on emissions to atmosphere for comparison with the limits specified in the air emission criteria for this site.

1.1 Emission Criteria

Information provided by Glynwed Pipe Systems Ltd. personnel regarding the air emission limits for this site has been included in Appendix A, Table 1 for reference purposes. It is understood that the air emission concentration limits are specified in *Huntingdonshire District Council Authorisation number 22/93, Variation Notice 25/99, dated 8th February 1994*.

All results have been referenced to conditions of 273K, 101.3kPa, without correction for moisture content.

1.2 Emission Points

During the works undertaken in March 2004 the following release point was included in the monitoring programme:

- Fluidised Bed Exhaust

2.0 MONITORING PROCEDURES

2.1 Emission Parameters

The following emission parameters were monitored during the programme of works: -

- gas flows;
- gas temperatures;
- total particulate matter;
- volatile organic compounds (as total carbon excluding particulate matter).

2.2 Monitoring Procedures

The monitoring was carried out using the following United Kingdom Accreditation Service (UKAS) approved procedures unless otherwise stated: -

- **gas flows** were measured using a pitot tube and manometer based on the requirements of **BS EN 13284-1:2001 Stationary Source Emissions – Determination of low range concentration of dust – Part 1: Manual gravimetric method.** (RPSCE/1/2).
- **gas temperatures** were measured using a “k” type thermocouple and temperature sensor based on the requirements of **BS EN 13284-1:2001 Stationary Source Emissions – Determination of low range concentration of dust – Part 1: Manual gravimetric method.** (RPSCE/1/2).
- **total particulate matter** was measured using a sampling train based on the requirements of **BS EN 13284-1:2001 Stationary Source Emissions – Determination of low range concentration of dust – Part 1: Manual gravimetric method.** The samples were analysed by gravimetric techniques. (RPSCE/1/7c).
- **volatile organic compounds (as total carbon excluding particulate matter)** were measured using a Flame Ionisation Detector (FID) based on the requirements of **US EPA Method 25a** (US CFR- Protection of the Environment, 40, Part 60 Appendix A *Determination of total gaseous organic concentration using a flame ionisation analyser*). (RPSCE/1/4).

Sampling was undertaken during what was reported by Glynwed Pipe Systems Ltd. personnel to be normal operating conditions.

Exhaust gases were conditioned as required prior to their introduction into direct reading analysers and extractive gas sampling trains.

All analyses were undertaken by RPS Laboratories, Manchester, which is a UKAS accredited laboratory.

3.0 RESULTS

A summary table of results is displayed in Appendix A, Table 1.

Full, tabulated data from the monitoring period is displayed in Appendix B, Tables 2 to 3.

Graphical profiles of the results of volatile organic compounds can be viewed in Appendix C, Figure 1.

Reportable blank results for the monitoring period are displayed in Appendix D, Table 4.

It is RPS Health, Safety and Environment procedure to include half of any 'less than' figure when determining a mean result.

4.0 OBSERVATIONS AND CONCLUSIONS

4.1 Fluidised Bed Exhaust

The mean concentration of all parameters measured from the Fluidised Bed Exhaust in March 2005 were *below* the relevant emission concentration limits as specified in *Huntingdonshire District Council Authorisation number 22/93, Variation Notice 25/99, dated 8th February 1994*, when referenced to 273K, 101.3kPa, without correction for moisture content.

APPENDIX A

Summary Table

Table 1

Summary Table of Emissions to Atmosphere Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems, Huntingdon in March 2005

Emission Parameter	Units	Mean Result	Concentration Limit ψ
Total Particulate Matter	mg/m ³	9.1	50
VOC's (as total carbon excluding particulate matter)	mg/m ³	8.5	20

Notes:

Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.

ψ As expressed in Huntingdonshire District Council Authorisation number 22/93, Variation Notice 25/99, dated 8th February 1994.

APPENDIX B
Tables of Results

Table 2

Results of Total Particulate Matter and General Emission Parameters Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems, Huntingdon in March 2005

Emission Parameter	Units	Mean Result
Sample Date	-	17-Mar-05
Sample Period	-	13:19 – 14:23
Barometric pressure	kPa	103.5
Internal area of duct	m ²	0.330
Stack Temperature	°C	102
Gas Velocity (as measured at sampling plane)	m/sec	16
Volumetric Flowrate (as measured)	m ³ /sec	5.3
Volumetric Flowrate (at reference conditions)	m ³ /sec*	4.0
Total Particulate Matter Mass Emission	kg/hr	0.13
Total Particulate Matter Concentration	mg/m ³ *	9.1

Notes:

* Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.

Table 3

Results of Volatile Organic Compounds (expressed as total carbon excluding particulate matter) Concentration Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems, Huntingdon in March 2005

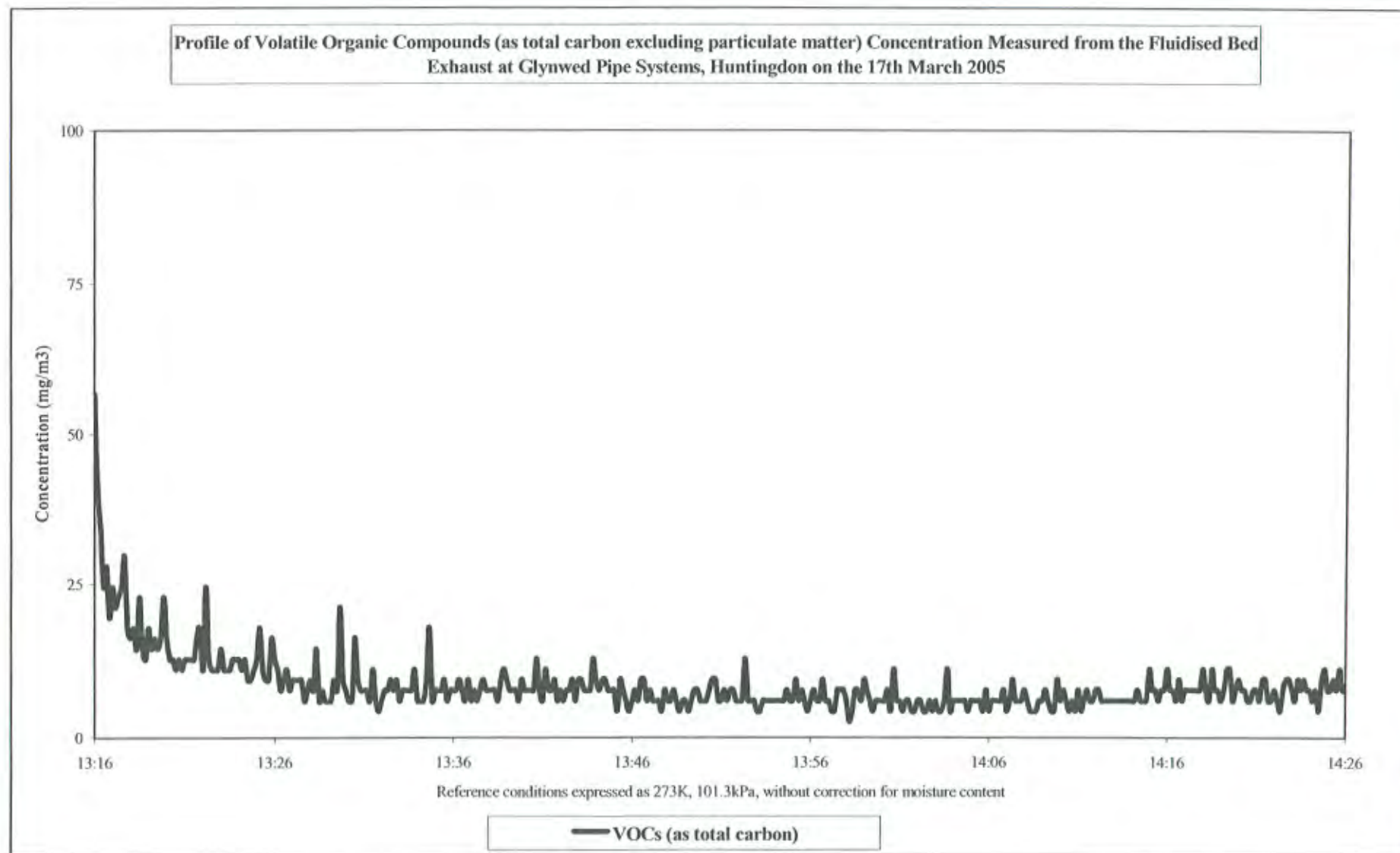
Sample Date	Sample Period	Units	VOC concentration (as total carbon excluding particulate matter)	
			Maximum	Mean
17-Mar-05	13:16 – 14:26	mg/m ³	57	8.5

Notes:

Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.

APPENDIX C
Emission Profiles

Figure 1



APPENDIX D
Reportable Blank Values

Table 4

Results of the Reportable Blank Concentrations for Total Particulate Matter Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems, Huntingdon in March 2005

Emission Parameter	Units	Date of Sampling	Result
Total Particulate Matter	mg/m ³	17-Mar-05	<0.49

Notes:

Reference conditions expressed as 273 K, 101.3 kPa, without correction for moisture content.