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GLYNWED PIPE SYSTEMS LIMITED

Report on Air Emission Monitoring at
Glywned Pipe Systems Limited
St. Peters Road
Huntingdon, Cambridgeshire
September 2004

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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 September 2004.

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 *Huntingdon District Council Authorisation 22/93, Variation 25/99*.

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 September 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;
- moisture;
- 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 operated in accordance with 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 operated in accordance with 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).
- **moisture content** was measured using a **US EPA Method 4** (US CFR- Protection of the Environment, 40, Part 60 Appendix A *Determination of moisture content in stack gases*) sampling train. Analysis was by gravimetric technique. (RPSCE/1/12).
- **total particulate matter** was measured using a sampling train operated in accordance with the requirements of **BS EN 13284-1:2001 Stationary Source Emissions – Determination of low range concentration of dust – Part 1: Manual gravimetric method.** Analysis was 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/1/4a).

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 the direct reading analyser and extractive gas sampling train.

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 and 3 and Appendix D, Table 4.

Graphical profiles of the results of volatile organic compounds can be viewed in Appendix C, Figures 1 and 2.

4.0 OBSERVATIONS AND CONCLUSIONS

4.1 Volatile Organic Compounds

The mean concentration of volatile organic compounds (as total carbon excluding particulate matter) measured from the Fluidised Bed Exhaust in September 2004 was **35 mg/m³**. This is **above** the emission concentration limit of **20 mg/m³** as specified in *Huntingdon District Council Authorisation 22/93, Variation 25/99*, when referenced to 273K, 101.3kPa, without correction for moisture content.

4.2 Total Particulate Matter

The mean concentration of total particulate matter measured from the Fluidised Bed Exhaust in September 2004 was **11 mg/m³**. This is **below** the emission concentration limit of **50 mg/m³** as specified in *Huntingdon District Council Authorisation 22/93, Variation 25/99*, when referenced to 273K, 101.3kPa, without correction for moisture content.

Table 1

**Summary Table of Emissions to Atmosphere Measured from the Fluidised Bed Exhaust at
Glynwed Pipe Systems Ltd, Huntingdon in September 2004**

Emission Parameter	Units	Result	Concentration Limit
Total Particulate Matter	mg/m ³	11	50
VOC's (as total carbon excluding particulate matter)	mg/m ³	35	20

Notes:

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

Results in bold type represent those in excess of the specified emission concentration limit.

ψ As expressed in Huntingdon District Council Authorisation 22/93, Variation 25/99.

Table 2

Results of Total Particulate Matter and General Emission Parameters Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Ltd, Huntingdon in September 2004

Emission Parameter	Units	Measured Value
Sample Date	-	8/9/04
Sample Period	-	13:36-14:36
Barometric Pressure	kPa	104.2
Internal Area Of Duct	m ²	0.33
Stack Temperature	°C	132
Gas Velocity (as measured at sampling plane)	m/sec	17
Volumetric Flowrate (as measured)	m ³ /sec	5.6
Volumetric Flowrate (at reference conditions)	m ³ /sec*	3.9
Total Particulate Matter Mass Emission	kg/hr	0.15
Total Particulate Matter Concentration	mg/m ³ *	11

Notes:

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

Table 3

**Results of Volatile Organic Compounds (as total carbon excluding particulate matter)
Concentration Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Ltd,
Huntingdon in September 2004**

Date of Sampling	Sample Period	Units	VOC Concentration (as total carbon) Sampling period (mg/m ³)	
			Maximum	
8/9/04	13:36-14:36	mg/m ³		131
			Mean	35

Notes:

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

Figure 1

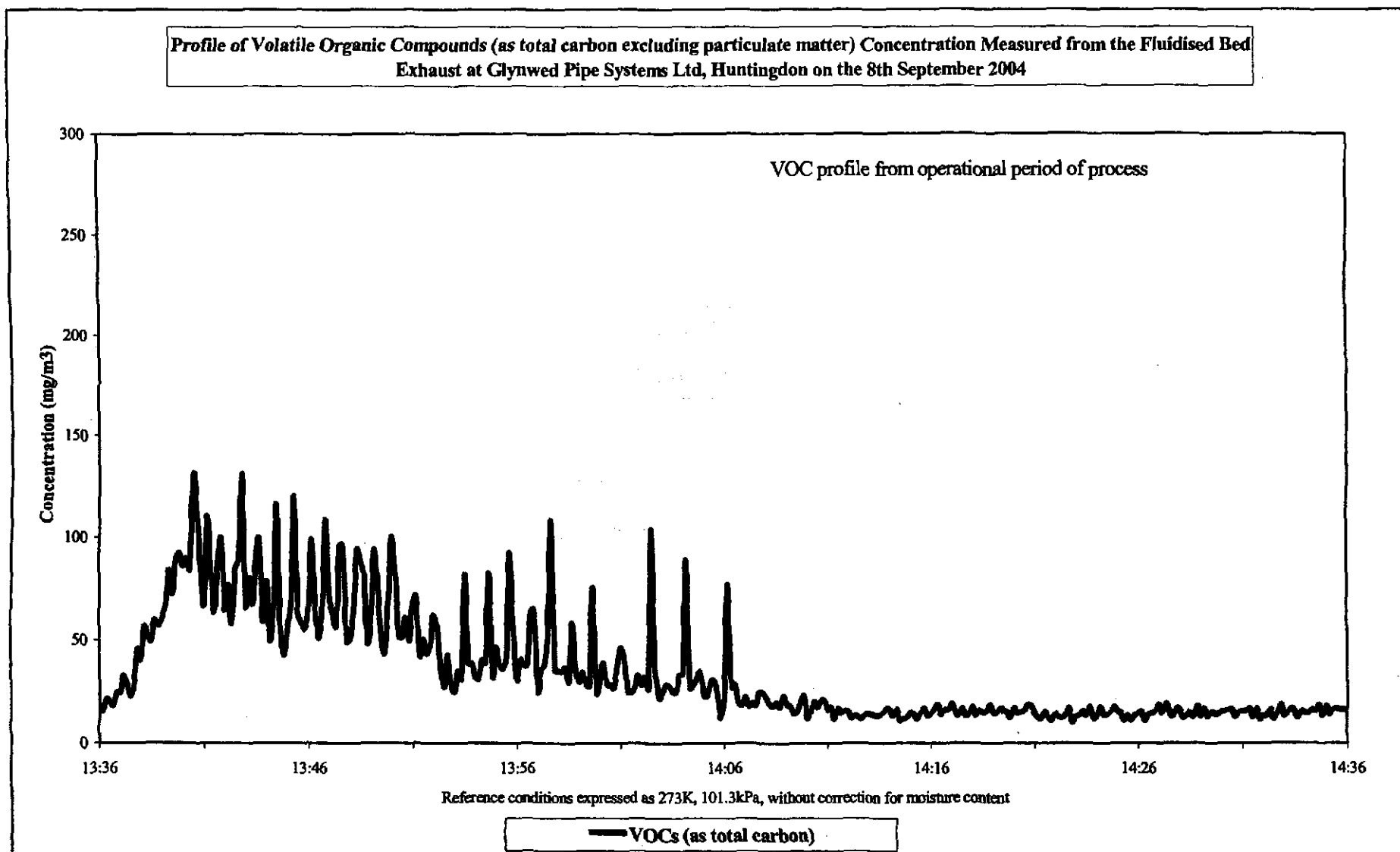
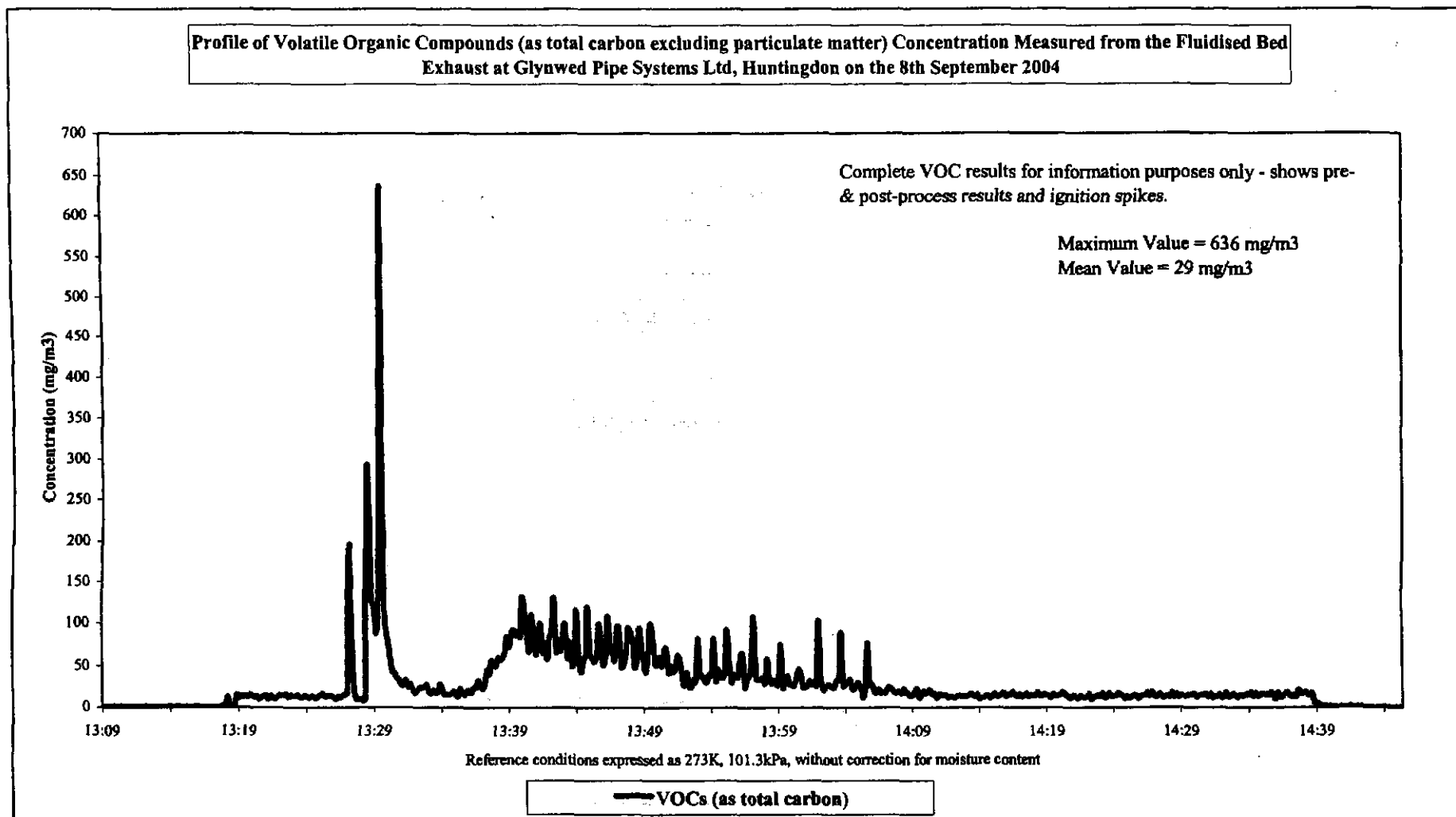


Figure 2



APPENDIX D

Reportable Blank Value

Table 4

Results of the Reportable Blank Concentration for Total Particulate Matter Measured from the Fluidised Bed Exhaust at Glynwed Pipe Systems Ltd, Huntingdon in September 2004

Emission Parameter	Unit	Date of Sampling	Result
Total Particulate Matter	mg/m ³	8/9/04	<1.0

Notes:

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