



Anchem
LABORATORIES LIMITED

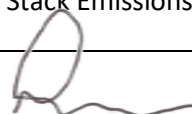
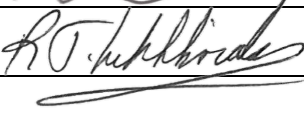
Registered Office:

Darcy Business Park
Darcy Way, Llandarcy
Neath, SA10 6EJ
Tel: 01792 323223
email: info@anchem.co.uk
www.anchem.co.uk
Company No. 4768038

Report for the Periodic Monitoring of Emissions to Air

Part 1: Executive Summary

Permit Number:	N/A
Operator:	Groundhog (UK) Ltd
Installation:	Spray Paint Booths

Test Report:	ALL112960/26/PR-1
Monitoring Dates:	09 & 11/03/2026
Client / Organisation:	Mr Chris Thomas
Address:	Groundhog (UK) Ltd
	Ynysygerwn Avenue
	Aberdulais
	SA10 8HH
Date of Report:	13/03/2026
Report Approved By:	Phillip Ruck BSc
MCERTS Number/Level/Technical Endorsement	MM 11 1117 Level 2, TE1, TE2, TE3, TE4
Designation:	Stack Emissions Analyst
Signed:	 Phillip Ruck
Reviewed:	 Robert Lethbridge

Contents

Part 1 Executive summary

Page number	Description
1	Executive Summary
2 – 3	Contents
4	Monitoring objectives
5 – 6	Monitoring results
7	Process status
8	Operating information
9	Monitoring deviations

Part 2 – Supporting information

Page number	Description
N/A	Appendix 1
N/A	Sampling personnel
N/A	Method specification
N/A	Equipment Checklist
N/A	Appendix 2
N/A	Mobiles Spray Booth LHS stack details including gas measurements (7 pages)
N/A	Appendix 3
N/A	Mobiles Spray Booth RHS stack details including gas measurements (7 pages)
N/A	Appendix 4
N/A	Static Spray Booth LHS stack details including gas measurements (7 pages)
N/A	Appendix 5
N/A	Static Spray Booth RHS stack details including gas measurements (7 pages)
N/A	Appendix 6 (Uncertainty)
N/A	Appendix 7 (Annual calibration details & analysis data retained at permanent laboratory)

Monitoring objectives

At the request of Mr Chris Thomas of Groundhog (UK) Ltd, Anchem Laboratories Limited has carried out an “emissions to atmosphere” monitoring regime in the exhaust ductwork of 4 Spray Booth stacks at their Aberdulais plant. This has been undertaken for internal process control purposes only.

Emission point	Sample number	Substance to be monitored	Special requirements
Mobiles Spray Booth LHS	112960/1	TOC	Minimum 5 hours
Mobiles Spray Booth RHS	112960/2		
Static Spray Booth LHS	112960/3		
Static Spray Booth RHS	112960/4		

Monitoring results

Emission Point	Mobiles Spray Booth LHS	Mobiles Spray Booth RHS
Sample Number	112960/1	112960/2
Substance to be Monitored	TOC	
Emission Limit Value	N/A	
Periodic Monitoring Result	239.4	365.5
Uncertainty	±2.2	±1.9
Units	mgC/Nm ³	
Reference Conditions	273K, 101.3kPa without correction for moisture content or oxygen.	
Date of Sampling	11/03/2026	
Start/End Time	09:41 – 16:05	09:25 – 16:06
Average Volumetric flow @ reference conditions / m³/hr	14827	13910
Standard Reference Method	BS EN 12619	
Technical Procedure Reference	ANC/S/2	
Accreditation Status	MCERTS	
Process Status (Load/Feedstock)	See Process Status (page 7)	

Monitoring results

Emission Point	Static Spray Booth LHS	Static Spray Booth RHS
Sample Number	112960/3	112960/4
Substance to be Monitored	TOC	
Emission Limit Value	N/A	
Periodic Monitoring Result	85.9	64.6
Uncertainty	±2.2	±1.9
Units	mgC/Nm ³	
Reference Conditions	273K, 101.3kPa without correction for moisture content or oxygen.	
Date of Sampling	09/03/2026	
Start/End Time	09:34 – 15:56	09:37 – 16:00
Average Volumetric flow @ reference conditions / m³/hr	20100	12861
Standard Reference Method	BS EN 12619	
Technical Procedure Reference	ANC/S/2	
Accreditation Status	MCERTS	
Process Status (Load/Feedstock)	See Process Status (page 7)	

Process status

During monitoring all processes were observed to be running normally with no unusual occurrences and no incidents reported by the operators.

Spraying on the static LHS Spray Booth had limited activities during the morning with spraying only being conducted after break. Detailed process information was unavailable; however, all processes were confirmed as operational during the test by Groundhog site personnel.

During the testing on the mobiles spray booth, we experienced a power trip. The testing was only resumed once the analysers were back to operating temperature and the calibration had been checked.

Operating information

Nature of process (continuous or batch)	All processes are batch in nature
What part of the batch was sampled or whole batch (if applicable)	Where possible, numerous batches have been sampled during the monitoring duration. However at least a single batch has been sampled.
What fuel was used (if applicable)	N/A
What feedstock was used during the monitoring (if applicable)	Solvent based paint and thinners utilised
“Normal” load, throughput or continuous rating of plant	N/A
What type of abatement system and whether operating	There is no means of abatement present on any of the exhausts tested
The periodic monitoring result and the results from the operators CEMS	There is no CEMS fitted with the purpose of monitoring emissions to air

Monitoring Deviations:**Why any substance(s) in the monitoring objectives were not monitored.**

N/A

Why any substance(s) were not monitored in accordance with the monitoring method and any other issues relevant to the monitoring results.

The monitoring on all process stacks did not deviate from documented in-house method ANC/S/2.

With regards to the stack velocity measurement in accordance with ANC/S/36, the moisture was estimated at a nominal value of 2%. Only a single measurement traverse was available on each stack. Where applicable the number of sampling points were doubled in accordance with the method.

There were no other deviations from documented in-house methodologies.

Part 2: Supporting information

APPENDIX 1

Sampling personnel

Name	Function	MCERTS number	MCERTS level	Technical endorsements
P Ruck	Team Leader	MM 11 1117	Level 2	TE1, TE2, TE3, TE4
L Liguz	Emissions Analyst	MM 24 1851	Level 1	-

Method specifications

Substance	Standard reference method	Anchem technical procedure
TOC	BS EN 12619:2013	ANC/S/2
Velocity	ISO 16911:2014 & MID	ANC/S/36

Equipment checklist

Please see relevant appendices and site-specific protocol associated with monitoring campaign for equipment utilised during monitoring & checklist.

APPENDIX 2

Mobiles Spray Booth LHS

(7 Pages)

Stack diagram



Stack Dimension (m)	0.69m
Homogeneity test previously carried out (yes/no)	No
Is the gas stream homogeneous? (yes/no/unknown)	Unknown

Anchem Laboratories Ltd TOC Summary

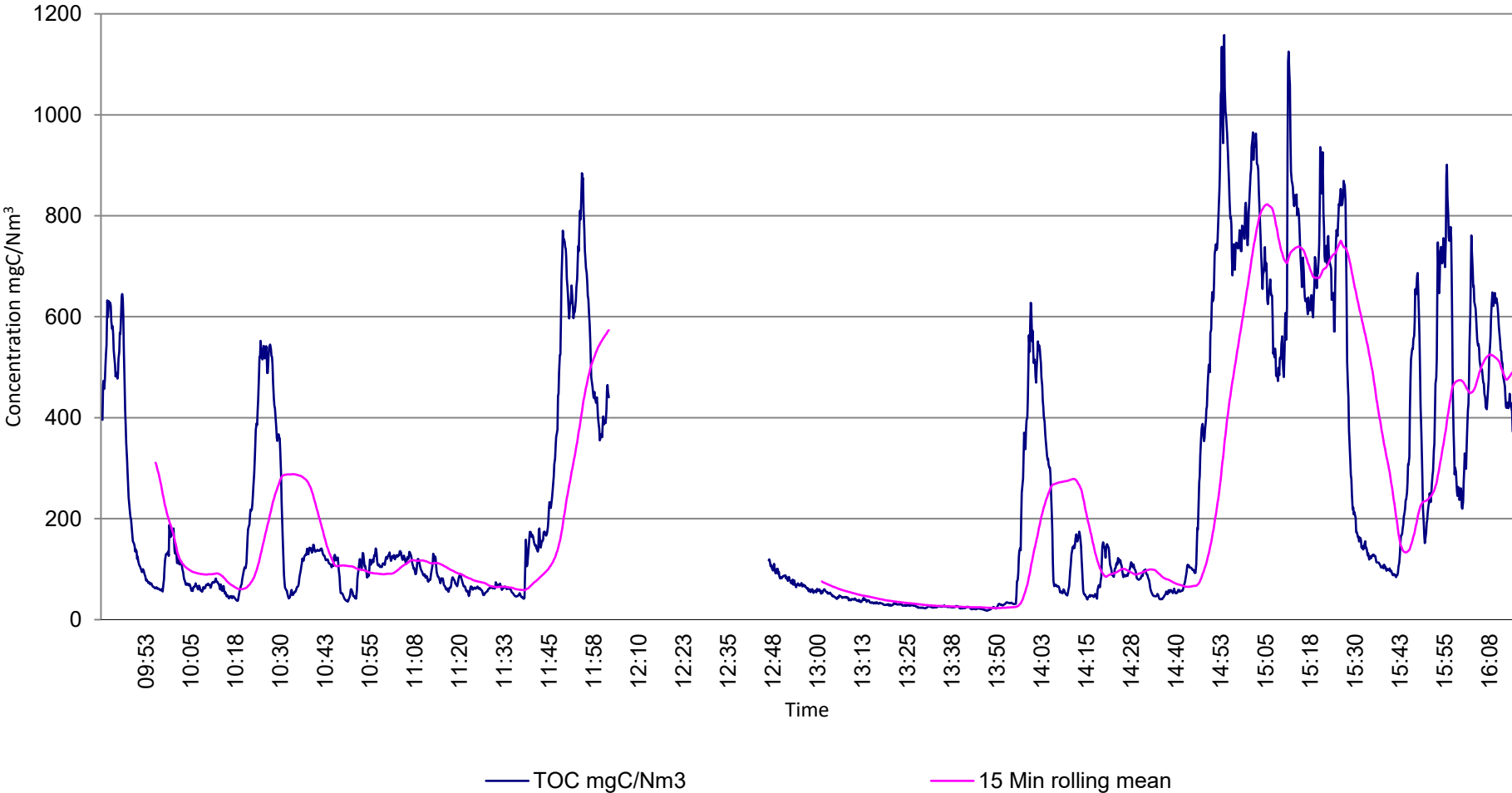
Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Mobiles Spray Booth LHS
Substance to be monitored	TOC (propane equivalent)
Sample Number	112960/1
Date	11/03/2026
Team leader	Phil Ruck
Analyst(s)	Louie Liguz
Barometric pressure (mb)	1008.5
Span Gas Concentration (ppm)	801.6
Span Gas Cylinder Reference	5701203
Volume flow at STP (m ³ /hour)	14827
Start Time	09:41:00
End Time	16:05:00
% Drift	0.50
% Uncertainty	0.91
Average concentration @ STP, Wet Gas (mgC/Nm ³)	239.40
15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	225.67
Highest 15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	822.49
Emission rate @ STP wet gas (gC/hour)	3550
Emission uncertainty concentration	2.2

Document Reference ANC408 Issue 12

TOC concentrations measured on the Mobiles Spray Booth LHS, at Groundhog (UK) Ltd, Aberdulais

Date: 11/3/2026

Sample No: 112960/1



TOC concentrations measured on the Mobiles Spray Booth LHS, at
Groundhog (UK) Ltd, Aberdulais

Date: 11/3/2026

Sample No: 112960/1

Concentration	TOC mgC/Nm ³	15 Min rolling mean
Minimum	17.7	23.0
Maximum	1158.0	822.5
Average	239.4	225.7

TOC site worksheet

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Mobiles Spray Booth LHS
Substance to be monitored	TOC (propane equivalent)
Date	11/03/2026
Sample Number	112960/1
Homogeneity test previously conducted? (Yes/No)	No
Is the gas stream homogeneous? (Yes/No/Unknown)	Unknown

Preliminary gas test

Sample point number	1	2	3	4	5	6	7	8	9
TOC concentration ppm	200								

Range of analyser	1000
-------------------	------

Start of test **09:41**

Instrument adjustment through analyser

Initial instrument zero gas reading (ppm)	0.0
Instrument span gas reading (ppm)	801.6
Post instrument zero gas reading (ppm)	0.0

System leak test through line

Initial system leak zero gas reading (ppm)	0.3
System leak span gas reading (ppm)	802.0
Post system leak zero gas reading (ppm)	2.5

% Leak	0.0
--------	-----

End of test **16:05**

System leak test through line

Initial drift zero gas reading (ppm)	0.3
System drift span gas reading (ppm)	798.0
Post drift zero gas reading (ppm)	0.2

Test Span Drift (%)	0.4
Test Zero Drift (%)	0.0

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth LHS
Date	11/03/2026
Sample Number	112960/1
Bar Pressure (mb)	1008
Moisture (%)	2.00

Gas Flow	Out
Port Nipple (cm)	0
Dimension (m)	0.69
Stack C.S.A (m ²)	0.374
Tape Measure	A/S727
Timer	A/S685
Barometer No.	A/S543

Field Performance Criteria	Acceptable
Pitch <±10°	N/A
Swirl <±15°	Yes
Stack Internal Area	Yes
Field Repeatability	N/A
Blockage Check	Yes
Average Stack Temp °C	18

% O ₂	% CO ₂	% CO
20.9	0.0	0.0

Traverse Line 1

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch
1	5.0	13.7	1.13	18	8	N/A
2	17.3	8.6	0.44	18	9	N/A
3	51.8	11.7	0.83	18	10	N/A
4	64.0	13.0	1.01	18	9	N/A

Traverse Line 2

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 3

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 4

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Number of Sample Points
4

Flow Characteristics Meet Requirements of EN ISO 16911?
Yes

EN ISO 16911 L-Type Pitot Summary Page

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth LHS
Date	11-Mar-26
Sample Number	112960/1
X-Sectional Area	0.374
Pitot Tube Factor	1.00
Average DP (kPa)	0.083
% Water Vapour	2.0
Average % Oxygen	20.9
Average % Carbon Dioxide	0.0
Average % Carbon Monoxide	0.0
Average % Nitrogen	79.1
Barometric Pressure (mb)	1008
Arithmetic Average Duct Static Pressure (hPa)	0.52
Absolute Stack Gas Pressure (KPa)	100.9
Average Stack Gas Temperature (K)	291
Velocity in Stack (m/s)	11.8
Volumetric Flow at Stack Conditions (m ³ /sec)	4.41
Volumetric Flow at Stack Conditions (m ³ /hour)	15878
Volumetric flow rate STP, Wet (m ³ /sec)	4.12
Volumetric flow rate at STP, Wet (m ³ /hour)	14827
Volumetric flow rate STP, Dry (m ³ /sec)	4.04
Volumetric flow rate at STP, Dry (m ³ /hour)	14530
% Uncertainty of Measurement	5.6

APPENDIX 3

Mobiles Spray Booth RHS

(7 Pages)

Stack diagram



Stack Dimension (m)	0.69m
Homogeneity test previously carried out (yes/no)	No
Is the gas stream homogeneous? (yes/no/unknown)	Unknown

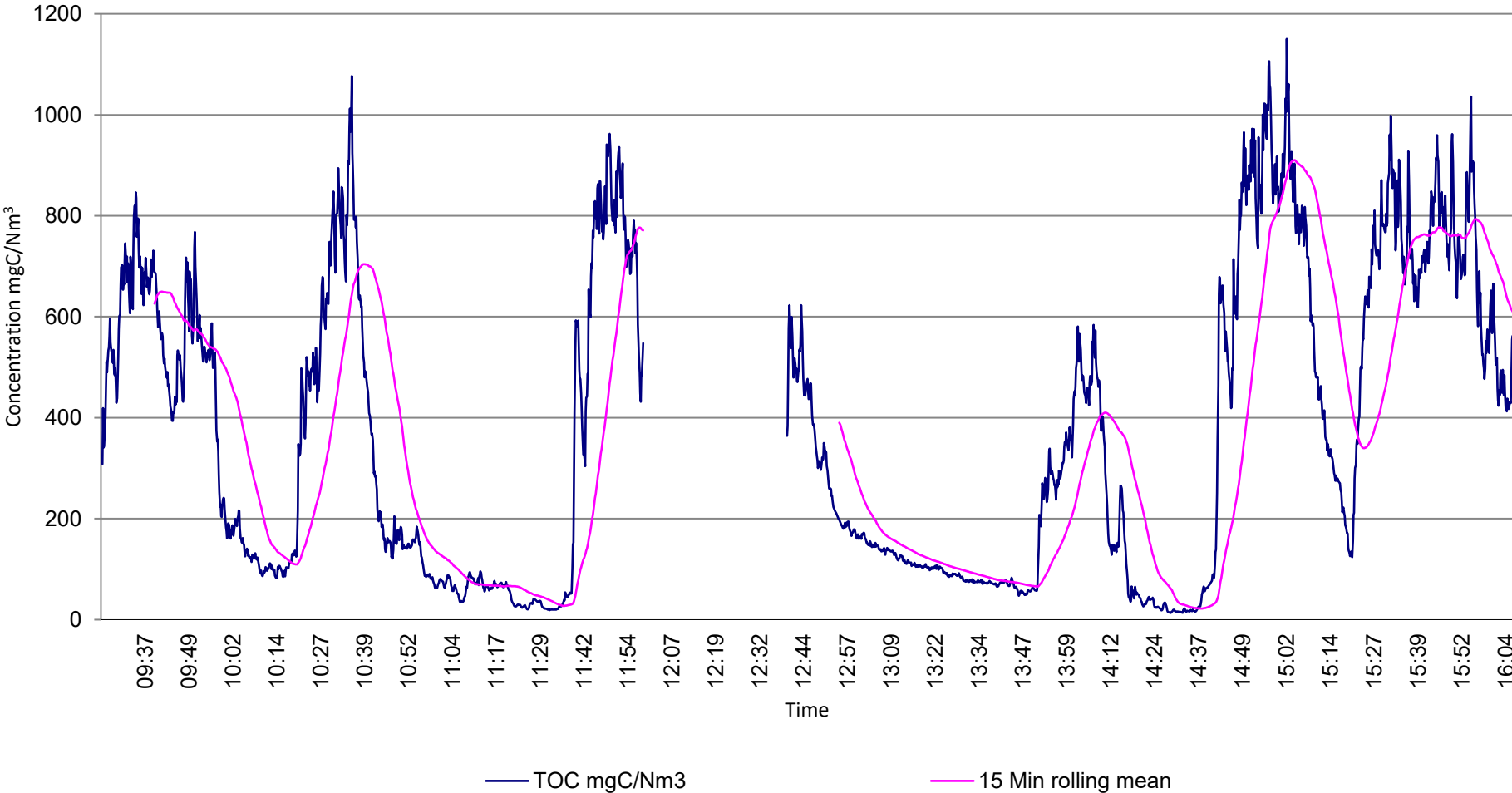
Anchem Laboratories Ltd TOC Summary

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Mobiles Spray Booth RHS
Substance to be monitored	TOC (propane equivalent)
Sample Number	112960/2
Date	11/03/2026
Team leader	Phil Ruck
Analyst(s)	Louie Liguz
Barometric pressure (mb)	1008.5
Span Gas Concentration (ppm)	801.6
Span Gas Cylinder Reference	5701203
Volume flow at STP (m ³ /hour)	13910
Start Time	09:25:00
End Time	16:06:00
% Drift	0.29
% Uncertainty	0.51
Average concentration @ STP, Wet Gas (mgC/Nm ³)	365.54
15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	346.83
Highest 15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	910.20
Emission rate @ STP wet gas (gC/hour)	5085
Emission uncertainty concentration	1.9

TOC concentrations measured on the Mobiles Spray Booth RHS, at Groundhog (UK) Ltd, Aberdula

Date: 11/3/2026

Sample No: 112960/2





TOC concentrations measured on the Mobiles Spray Booth RHS, at
 Groundhog (UK) Ltd, Aberdulais
 Date: 11/3/2026
 Sample No: 112960/2

Concentration	TOC mgC/Nm ³	15 Min rolling mean
Minimum	13.4	22.0
Maximum	1150.4	910.2
Average	365.5	346.8

TOC site worksheet

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Mobiles Spray Booth RHS
Substance to be monitored	TOC (propane equivalent)
Date	11/03/2026
Sample Number	112960/2
Homogeneity test previously conducted? (Yes/No)	No
Is the gas stream homogeneous? (Yes/No/Unknown)	Unknown

Preliminary gas test

Sample point number	1	2	3	4	5	6	7	8	9
TOC concentration ppm	200								

Range of analyser	1000
-------------------	------

Start of test 09:25

Instrument adjustment through analyser

Initial instrument zero gas reading (ppm)	0.0
Instrument span gas reading (ppm)	801.6
Post instrument zero gas reading (ppm)	0.0

System leak test through line

Initial system leak zero gas reading (ppm)	0.0
System leak span gas reading (ppm)	802.0
Post system leak zero gas reading (ppm)	0.2

% Leak	0.0
--------	-----

End of test 16:06

System leak test through line

Initial drift zero gas reading (ppm)	0.3
System drift span gas reading (ppm)	799.7
Post drift zero gas reading (ppm)	0.2

Test Span Drift (%)	0.2
Test Zero Drift (%)	0.0

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth RHS
Date	11/03/2026
Sample Number	112960/2
Bar Pressure (mb)	1008
Moisture (%)	2.00

Gas Flow	Out
Port Nipple (cm)	0
Dimension (m)	0.69
Stack C.S.A (m ²)	0.374
Tape Measure	A/S727
Timer	A/S685
Barometer No.	A/S543

Field Performance Criteria	Acceptable
Pitch <±10°	N/A
Swirl <±15°	Yes
Stack Internal Area	Yes
Field Repeatability	N/A
Blockage Check	Yes
Average Stack Temp °C	18

% O ₂	% CO ₂	% CO
20.9	0.0	0.0

Traverse Line 1

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch
1	5.0	7.7	0.36	18	7	N/A
2	17.3	11.7	0.83	18	7	N/A
3	51.8	13.0	1.01	18	8	N/A
4	64.0	11.7	0.82	18	7	N/A

Traverse Line 2

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 3

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 4

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Number of Sample Points
4

Flow Characteristics Meet Requirements of EN ISO 16911?
Yes

EN ISO 16911 L-Type Pitot Summary Page

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth RHS
Date	11-Mar-26
Sample Number	112960/2
X-Sectional Area	0.374
Pitot Tube Factor	1.00
Average DP (kPa)	0.073
% Water Vapour	2.0
Average % Oxygen	20.9
Average % Carbon Dioxide	0.0
Average % Carbon Monoxide	0.0
Average % Nitrogen	79.1
Barometric Pressure (mb)	1008
Arithmetic Average Duct Static Pressure (hPa)	0.18
Absolute Stack Gas Pressure (KPa)	100.8
Average Stack Gas Temperature (K)	291
Velocity in Stack (m/s)	11.1
Volumetric Flow at Stack Conditions (m ³ /sec)	4.14
Volumetric Flow at Stack Conditions (m ³ /hour)	14902
Volumetric flow rate STP, Wet (m ³ /sec)	3.86
Volumetric flow rate at STP, Wet (m ³ /hour)	13910
Volumetric flow rate STP, Dry (m ³ /sec)	3.79
Volumetric flow rate at STP, Dry (m ³ /hour)	13632
% Uncertainty of Measurement	5.6

APPENDIX 4

Static Spray Booth LHS

(7 Pages)

Stack diagram



Stack Dimension (m)	0.7 X 0.7m
Homogeneity test previously carried out (yes/no)	No
Is the gas stream homogeneous? (yes/no/unknown)	Unknown

Anchem Laboratories Ltd TOC Summary

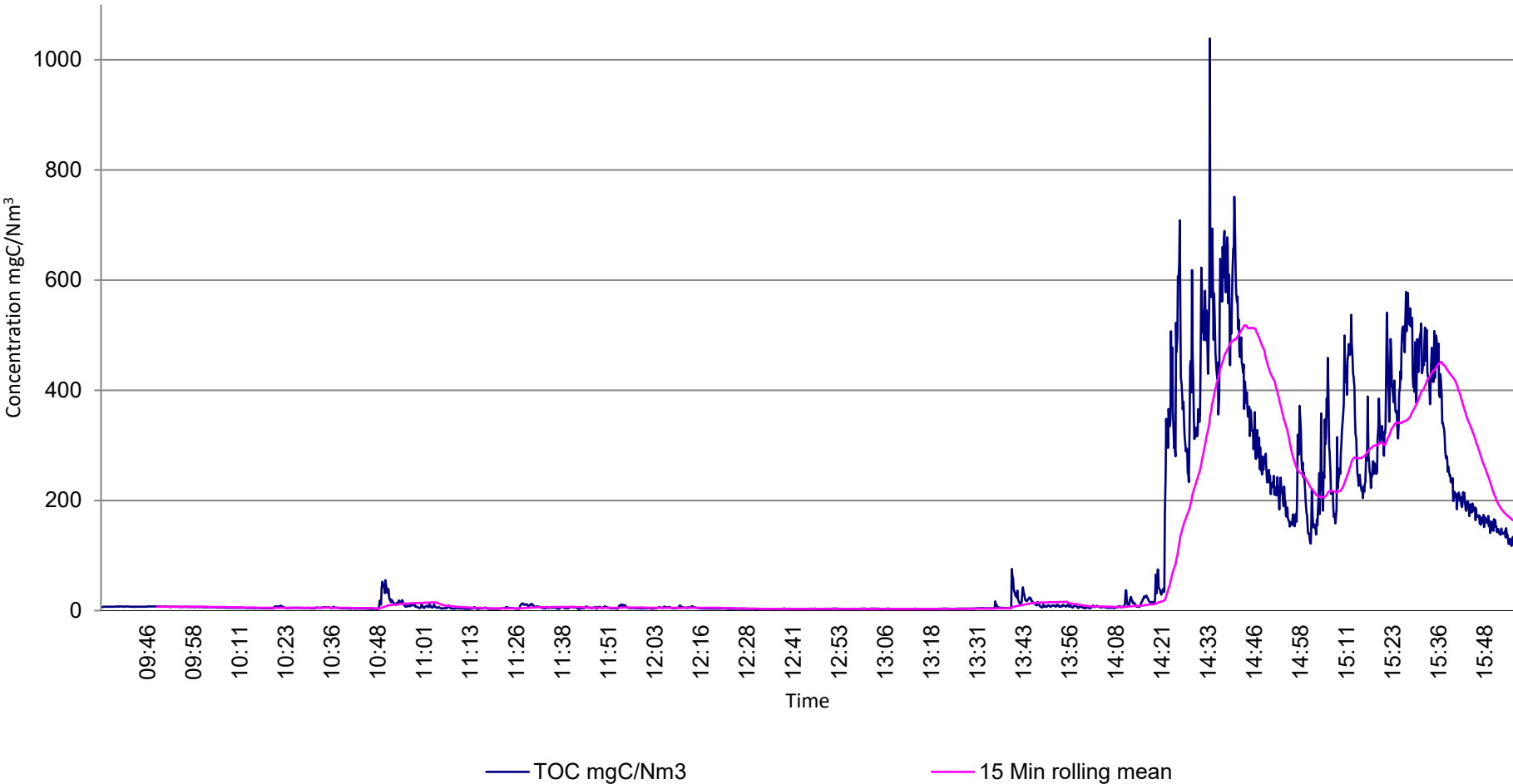
Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Static Spray Booth LHS
Substance to be monitored	TOC (propane equivalent)
Sample Number	112960/3
Date	09/03/2026
Team leader	Phil Ruck
Analyst(s)	Louie Liguz
Barometric pressure (mb)	1015
Span Gas Concentration (ppm)	801.6
Span Gas Cylinder Reference	5701203
Volume flow at STP (m ³ /hour)	20100
Start Time	09:34:00
End Time	15:56:00
% Drift	0.85
% Uncertainty	2.52
Average concentration @ STP, Wet Gas (mgC/Nm ³)	85.89
15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	86.20
Highest 15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	518.23
Emission rate @ STP wet gas (gC/hour)	1726
Emission uncertainty concentration	2.2

Document Reference ANC408 Issue 12

TOC concentrations measured on the Static Spray Booth LHS, at Groundhog (UK) Ltd, Aberdulais

Date: 9/3/2026

Sample No: 112960/3



TOC concentrations measured on the Static Spray Booth LHS, at
Groundhog (UK) Ltd, Aberdulais

Date: 9/3/2026

Sample No: 112960/3

Concentration	TOC mgC/Nm ³	15 Min rolling mean
Minimum	2.9	3.1
Maximum	1038.7	518.2
Average	85.9	86.2

TOC site worksheet

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Static Spray Booth LHS
Substance to be monitored	TOC (propane equivalent)
Date	09/03/2026
Sample Number	112960/3
Homogeneity test previously conducted? (Yes/No)	No
Is the gas stream homogeneous? (Yes/No/Unknown)	Unknown

Preliminary gas test

Sample point number	1	2	3	4	5	6	7	8	9
TOC concentration ppm	10								

Range of analyser	1000
-------------------	------

Start of test 09:34

Instrument adjustment through analyser

Initial instrument zero gas reading (ppm)	0.0
Instrument span gas reading (ppm)	801.6
Post instrument zero gas reading (ppm)	0.0

System leak test through line

Initial system leak zero gas reading (ppm)	0.0
System leak span gas reading (ppm)	802.0
Post system leak zero gas reading (ppm)	0.2

% Leak	0.0
--------	-----

End of test 15:56

System leak test through line

Initial drift zero gas reading (ppm)	0.8
System drift span gas reading (ppm)	795.2
Post drift zero gas reading (ppm)	0.4

Test Span Drift (%)	0.8
Test Zero Drift (%)	0.0

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Static Spray Booth LHS
Date	09/03/2026
Sample Number	112960/3
Bar Pressure (mb)	1016
Moisture (%)	2.00

Gas Flow	Out
Port Nipple (cm)	0
Dimension (m)	0.7 x 0.7
Stack C.S.A (m ²)	0.490
Tape Measure	A/S727
Timer	A/S637
Barometer No.	A/S543

Field Performance Criteria	Acceptable
Pitch <±10°	N/A
Swirl <±15°	Yes
Stack Internal Area	Yes
Field Repeatability	N/A
Blockage Check	Yes
Average Stack Temp °C	20

% O ₂	% CO ₂	% CO
20.9	0.0	0.0

Traverse Line 1

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch
1	0.1	5.8	0.20	20	8	N/A
2	0.4	13.2	1.05	20	10	N/A
3	0.6	17.4	1.82	20	8	N/A

Traverse Line 2

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 3

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 4

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Number of Sample Points
3

Flow Characteristics Meet Requirements of EN ISO 16911?
Yes

EN ISO 16911 L-Type Pitot Summary Page

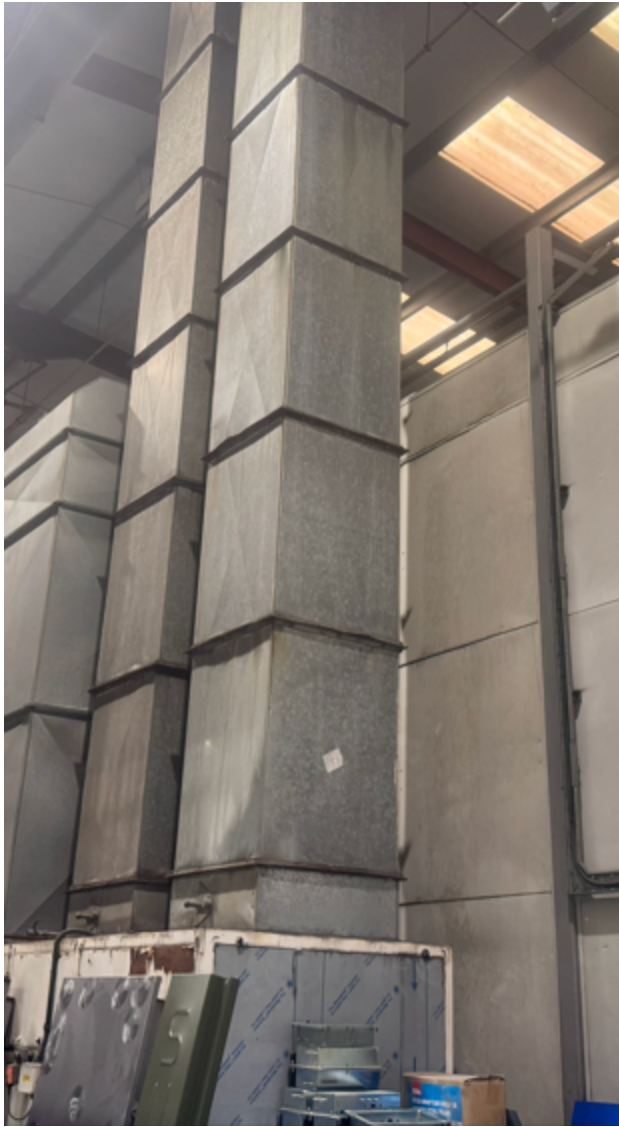
Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Static Spray Booth LHS
Date	09/03/2026
Sample Number	112960/3
X-Sectional Area	0.490
Pitot Tube Factor	1.00
Average DP (kPa)	0.089
% Water Vapour	2.0
Average % Oxygen	20.9
Average % Carbon Dioxide	0.0
Average % Carbon Monoxide	0.0
Average % Nitrogen	79.1
Barometric Pressure (mb)	1016
Arithmetic Average Duct Static Pressure (hPa)	0.94
Absolute Stack Gas Pressure (KPa)	101.7
Average Stack Gas Temperature (K)	293
Velocity in Stack (m/s)	12.2
Volumetric Flow at Stack Conditions (m ³ /sec)	6.0
Volumetric Flow at Stack Conditions (m ³ /hour)	21494
Volumetric flow rate STP, Wet (m ³ /sec)	5.6
Volumetric flow rate at STP, Wet (m ³ /hour)	20100
Volumetric flow rate STP, Dry (m ³ /sec)	5.5
Volumetric flow rate at STP, Dry (m ³ /hour)	19698
% Uncertainty of Measurement	5.6

APPENDIX 5

Static Spray Booth RHS

(7 Pages)

Stack diagram



Stack Dimension (m)	0.7 X 0.7m
Homogeneity test previously carried out (yes/no)	No
Is the gas stream homogeneous? (yes/no/unknown)	Unknown

Anchem Laboratories Ltd TOC Summary

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Static Spray Booth RHS
Substance to be monitored	TOC (propane equivalent)
Sample Number	112960/4
Date	09/03/2026
Team leader	Phil Ruck
Analyst(s)	Louie Liguz
Barometric pressure (mb)	1015
Span Gas Concentration (ppm)	801.6
Span Gas Cylinder Reference	5701203
Volume flow at STP (m ³ /hour)	12861
Start Time	09:37:00
End Time	16:00:00
% Drift	0.81
% Uncertainty	3.00
Average concentration @ STP, Wet Gas (mgC/Nm ³)	64.60
15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	66.46
Highest 15 minute rolling mean @ STP, Wet Gas (mgC/Nm ³)	394.84
Emission rate @ STP wet gas (gC/hour)	831
Emission uncertainty concentration	1.9

TOC concentrations measured on the Static Spray Booth RHS, at
Groundhog (UK) Ltd, Aberdulais

Date: 9/3/2026

Sample No: 112960/4

Concentration	TOC mgC/Nm ³	15 Min rolling mean
Minimum	2.8	3.4
Maximum	559.4	394.8
Average	64.6	66.5

TOC site worksheet

Customer name	Groundhog (UK) Ltd
Site location	Aberdulais
Emission point	Static Spray Booth RHS
Substance to be monitored	TOC (propane equivalent)
Date	09/03/2026
Sample Number	112960/4
Homogeneity test previously conducted? (Yes/No)	No
Is the gas stream homogeneous? (Yes/No/Unknown)	Unknown

Preliminary gas test

Sample point number	1	2	3	4	5	6	7	8	9
TOC concentration ppm	2								

Range of analyser	1000
-------------------	------

Start of test **09:37**

Instrument adjustment through analyser

Initial instrument zero gas reading (ppm)	0.0
Instrument span gas reading (ppm)	801.6
Post instrument zero gas reading (ppm)	0.0

System leak test through line

Initial system leak zero gas reading (ppm)	0.0
System leak span gas reading (ppm)	804.2
Post system leak zero gas reading (ppm)	0.0

% Leak	0.3
--------	-----

End of test **16:00**

System leak test through line

Initial drift zero gas reading (ppm)	0.5
System drift span gas reading (ppm)	797.7
Post drift zero gas reading (ppm)	0.5

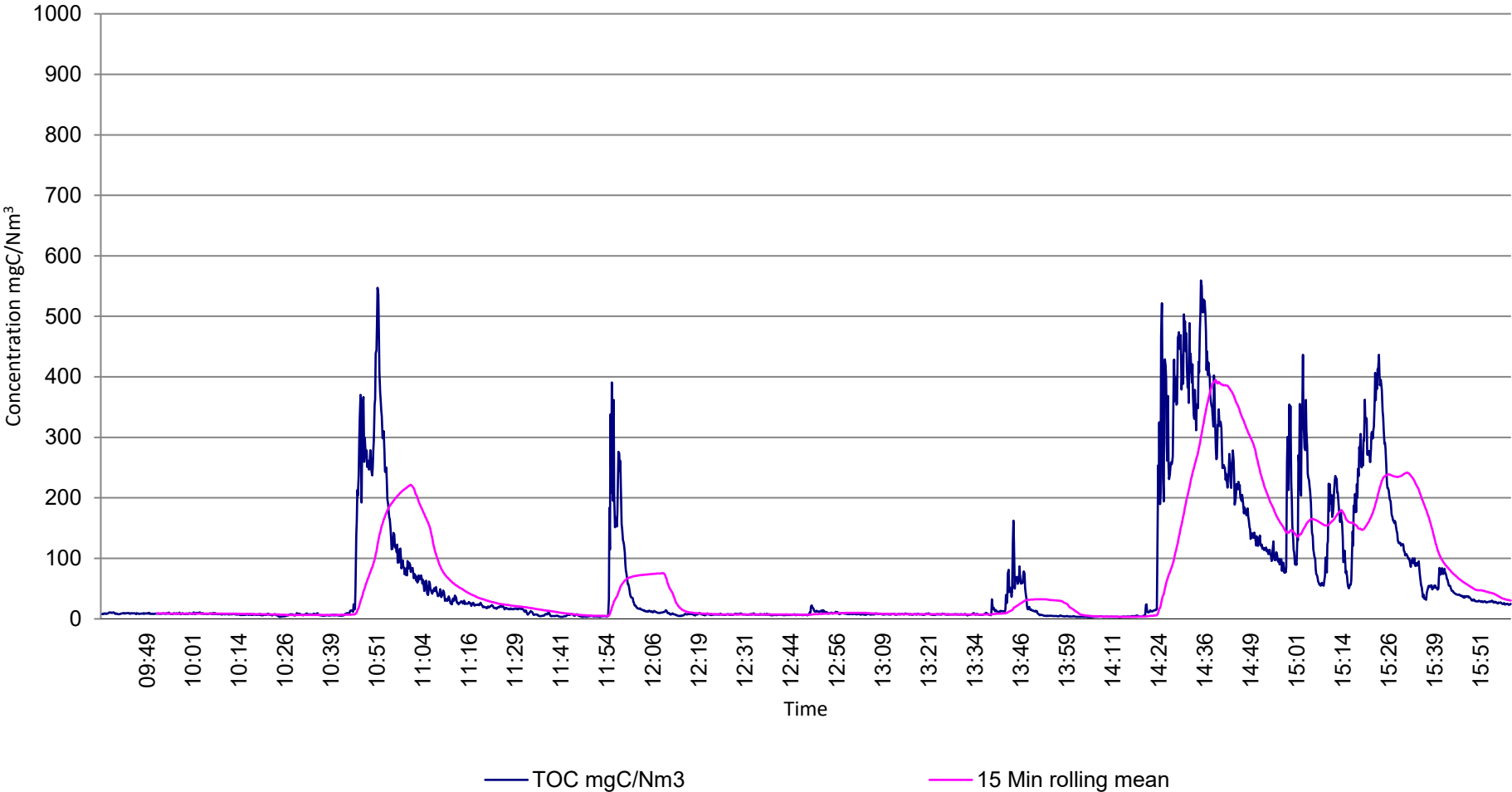
Test Span Drift (%)	0.5
Test Zero Drift (%)	0.1

Document Reference ANC408 Issue 12

TOC concentrations measured on the Static Spray Booth RHS, at Groundhog (UK) Ltd, Aberdulais

Date: 9/3/2026

Sample No: 112960/4



Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Static Spray Booth RHS
Date	09/03/2026
Sample Number	112960/4
Bar Pressure (mb)	1016
Moisture (%)	2.00

Gas Flow	Out
Port Nipple (cm)	0
Dimension (m)	0.7 x 0.7
Stack C.S.A (m ²)	0.490
Tape Measure	A/S727
Timer	A/S637
Barometer No.	A/S543

Field Performance Criteria	Acceptable
Pitch <±10°	N/A
Swirl <±15°	Yes
Stack Internal Area	Yes
Field Repeatability	N/A
Blockage Check	Yes
Average Stack Temp °C	20

% O ₂	% CO ₂	% CO
20.9	0.0	0.0

Traverse Line 1

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch
1	0.1	6.3	0.24	20	11	N/A
2	0.4	9.5	0.55	20	10	N/A
3	0.6	7.5	0.34	20	7	N/A

Traverse Line 2

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 3

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Traverse Line 4

Traverse Number	Distance (cm)	Average Velocity m/s	Pressure hPa	Average Stack Temp (°C)	Degree Angle of Swirl	Degree Angle of Pitch

Number of Sample Points
3

Flow Characteristics Meet Requirements of EN ISO 16911?
Yes

EN ISO 16911 L-Type Pitot Summary Page

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Static Spray Booth RHS
Date	09/03/2026
Sample Number	112960/4
X-Sectional Area	0.490
Pitot Tube Factor	1.00
Average DP (kPa)	0.036
% Water Vapour	2.0
Average % Oxygen	20.9
Average % Carbon Dioxide	0.0
Average % Carbon Monoxide	0.0
Average % Nitrogen	79.1
Barometric Pressure (mb)	1016
Arithmetic Average Duct Static Pressure (hPa)	0.88
Absolute Stack Gas Pressure (KPa)	101.7
Average Stack Gas Temperature (K)	293
Velocity in Stack (m/s)	7.8
Volumetric Flow at Stack Conditions (m ³ /sec)	3.8
Volumetric Flow at Stack Conditions (m ³ /hour)	13754
Volumetric flow rate STP, Wet (m ³ /sec)	3.6
Volumetric flow rate at STP, Wet (m ³ /hour)	12861
Volumetric flow rate STP, Dry (m ³ /sec)	3.5
Volumetric flow rate at STP, Dry (m ³ /hour)	12603
% Uncertainty of Measurement	5.6

APPENDIX 6

(Uncertainty)

(8 Pages)

Client	Groundhog (UK) Ltd	Date	11/03/2026
Emission Point ID	Mobiles Spray Booth LHS	Sample Number	112960/1

Measured TOC concentration (mgC/m³)	239.40	Calibration Value (mg/m³)	1574.58
ELV	N/A	Scale used (mg/m³)	1964.30

Performance Characteristic		Specification	Uncertainty	
Response Time (seconds)	3	<200s		
Logger Sampling Interval (seconds)	10			
Measurement Period (minutes)	384			
Number of Readings in Measurements	2304			
Standard dev Repeat @ Zero	0.39	≤±2.0% Range	u _{r0}	N/A
Standard dev Repeat @ Span	0.76	≤±2.0% Range	u _{rs}	0.02
Deviation from Linearity (±)	0.02	≤±2.0% Range	u _{fit}	0.23
Zero Drift (During Measurement)	0.02	% full scale	u _{odr}	1.06
Span Drift (During Measurement)	0.45	% full scale		
Losses in the Line (Leak)	0.05	<2% of value	u _{leak}	0.07
Sensitivity to Sample Gas Flow	1.6	<2.0% of the certification range	u _{spres}	0.00
Sensitivity to Ambient Temp @ Span	1.4	<5.0% of the certification range	u _{temp}	0.00
Sensitivity to Ambient Temp @ Zero	-2.4	<5.0% of the certification range		0.00
Influence of voltage variations	0.50	<2.0% of the certification range	u _{volt}	0.00
Effect of oxygen	0.71	<2% of the certification range	u _{int}	0.00
Measurement Uncertainty				
Combined Uncertainty (mg/m ³)	1.08			
Coverage Factor k	2			
Expanded uncertainty (mg/m ³)	2.17			
Expanded Uncertainty (% ELV)	N/A			
Expanded uncertainty (mg/m³)	2.17			
Expanded uncertainty (% Value)	0.91			

Requirement in EA TGN M2 is for uncertainty to be < ±15% of the measured value

ISO 16911 L-Type Pitot Uncertainty

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth LHS
Date	11/03/2026
Sample Number	112960/1

<u>Uncertainty</u>	<u>Estimated Value %</u>	<u>Measured Value %</u>	<u>sqr est</u>	<u>sqr meas</u>
Equipment Sources				
Master System Velocity Measurements		1	0	1
Master System Air Density Measurement		0.15	0	0.0225
Tape Measure		2	0	4
Testo			0	0
Thermocouples		1	0	1
Sensitivity to Atmospheric Pressure	2		4	0
Sensitivity to Ambient Temperature	2		4	0
Site Sources				
Stack Internal Area		2.09934E-06	0	4.40721E-12
Uncertainty in Flow Measurement Device Calibration	1		1	0
Uncertainty in Differential Pressure Device Calibration	1		1	0
Time	0		0	0
L-Type Blockage Test		-1.92%	0	0.000369822
Repeatability at single point			0	0
Swirl/Pitch Meter Position	2		4	0
Temperature on site			0	0
Pressure on Site			0	0
Humidity on Site	0		0	0
Laboratory Sources				
Uncertainty due to Caibration	2		4	0
Repeatability (hPa)		0.97	0	0.9409
Repeatability (m/s)		0.26		
Linearity	2		4	0
Measurement of Duct Diameter		0.67	0	0.4489
Effect of Swirl Angle (Clockwise)		1.2	0	1.44
Effect of Swirl Angle (Anti-clockwise)		0.88	0	0.7744
Sum of squares			31.62707	
		Total Uncertainty	5.6	

Client	Groundhog (UK) Ltd	Date	11/03/2026
Emission Point ID	Mobiles Spray Booth RHS	Sample Number	112960/2

Measured TOC concentration (mgC/m³)	365.54	Calibration Value (mg/m³)	1574.58
ELV	N/A	Scale used (mg/m³)	1964.30

Performance Characteristic		Specification	Uncertainty	
Response Time (seconds)	3	<200s		
Logger Sampling Interval (seconds)	10			
Measurement Period (minutes)	401			
Number of Readings in Measurements	2406			
Standard dev Repeat @ Zero	0.39	≤±2.0% Range	u _{r0}	N/A
Standard dev Repeat @ Span	0.76	≤±2.0% Range	u _{rs}	0.02
Deviation from Linearity (±)	0.02	≤±2.0% Range	u _{fit}	0.23
Zero Drift (During Measurement)	0.02	% full scale	u _{odr}	0.91
Span Drift (During Measurement)	0.24	% full scale		
Losses in the Line (Leak)	0.05	<2% of value	u _{leak}	0.11
Sensitivity to Sample Gas Flow	1.6	<2.0% of the certification range	u _{spres}	0.00
Sensitivity to Ambient Temp @ Span	1.4	<5.0% of the certification range	u _{temp}	0.00
Sensitivity to Ambient Temp @ Zero	-2.4	<5.0% of the certification range		0.00
Influence of voltage variations	0.50	<2.0% of the certification range	u _{volt}	0.00
Effect of oxygen	0.71	<2% of the certification range	u _{int}	0.00
Measurement Uncertainty				
Combined Uncertainty (mg/m ³)	0.94			
Coverage Factor k	2			
Expanded uncertainty (mg/m ³)	1.88			
Expanded Uncertainty (% ELV)	N/A			
Expanded uncertainty (mg/m³)	1.88			
Expanded uncertainty (% Value)	0.51			

Requirement in EA TGN M2 is for uncertainty to be < ±15% of the measured value

ISO 16911 L-Type Pitot Uncertainty

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Mobiles Spray Booth RHS
Date	11/03/2026
Sample Number	112960/2

<u>Uncertainty</u>	<u>Estimated Value %</u>	<u>Measured Value %</u>	<u>sqr est</u>	<u>sqr meas</u>
Equipment Sources				
Master System Velocity Measurements		1	0	1
Master System Air Density Measurement		0.15	0	0.0225
Tape Measure		2	0	4
Testo			0	0
Thermocouples		1	0	1
Sensitivity to Atmospheric Pressure	2		4	0
Sensitivity to Ambient Temperature	2		4	0
Site Sources				
Stack Internal Area		2.09934E-06	0	4.40721E-12
Uncertainty in Flow Measurement Device Calibration	1		1	0
Uncertainty in Differential Pressure Device Calibration	1		1	0
Time	0		0	0
L-Type Blockage Test		0.00%	0	0
Repeatability at single point			0	0
Swirl/Pitch Meter Position	2		4	0
Temperature on site			0	0
Pressure on Site			0	0
Humidity on Site	0		0	0
Laboratory Sources				
Uncertainty due to Caibration	2		4	0
Repeatability (hPa)		0.97	0	0.9409
Repeatability (m/s)		0.26		
Linearity	2		4	0
Measurement of Duct Diameter		0.67	0	0.4489
Effect of Swirl Angle (Clockwise)		1.2	0	1.44
Effect of Swirl Angle (Anti-clockwise)		0.88	0	0.7744
Sum of squares			31.6267	
		Total Uncertainty	5.6	

Client	Groundhog (UK) Ltd	Date	09/03/2026
Emission Point ID	Static Spray Booth LHS	Sample Number	112960/3

Measured TOC concentration (mgC/m³)	85.89	Calibration Value (mg/m³)	1574.58
ELV	N/A	Scale used (mg/m³)	1964.30

Performance Characteristic		Specification	Uncertainty	
Response Time (seconds)	3	<200s		
Logger Sampling Interval (seconds)	10			
Measurement Period (minutes)	382			
Number of Readings in Measurements	2292			
Standard dev Repeat @ Zero	0.39	≤±2.0% Range	u _{r0}	N/A
Standard dev Repeat @ Span	0.76	≤±2.0% Range	u _{rs}	0.02
Deviation from Linearity (±)	0.02	≤±2.0% Range	u _{fit}	0.23
Zero Drift (During Measurement)	0.05	% full scale	u _{odr}	1.06
Span Drift (During Measurement)	0.80	% full scale		
Losses in the Line (Leak)	0.05	<2% of value	u _{leak}	0.02
Sensitivity to Sample Gas Flow	1.6	<2.0% of the certification range	u _{spres}	0.00
Sensitivity to Ambient Temp @ Span	1.4	<5.0% of the certification range	u _{temp}	0.00
Sensitivity to Ambient Temp @ Zero	-2.4	<5.0% of the certification range		0.00
Influence of voltage variations	0.50	<2.0% of the certification range	u _{volt}	0.00
Effect of oxygen	0.71	<2% of the certification range	u _{int}	0.00
Measurement Uncertainty				
Combined Uncertainty (mg/m ³)	1.08			
Coverage Factor k	2			
Expanded uncertainty (mg/m ³)	2.17			
Expanded Uncertainty (% ELV)	N/A			
Expanded uncertainty (mg/m³)	2.17			
Expanded uncertainty (% Value)	2.52			
Requirement in EA TGN M2 is for uncertainty to be < ±15% of the measured value				

ISO 16911 L-Type Pitot Uncertainty

Client	Groundhog (UK) Ltd
Site	Aberdula
Emission Point	Static Spray Booth LHS
Date	09/03/206
Sample Number	112960/3

<u>Uncertainty</u>	<u>Estimated Value %</u>	<u>Measured Value %</u>	<u>sqr est</u>	<u>sqr meas</u>
Equipment Sources				
Master System Velocity Measurements		1	0	1
Master System Air Density Measurement		0.15	0	0.0225
Tape Measure		2	0	4
Testo			0	0
Thermocouples		1	0	1
Sensitivity to Atmospheric Pressure	2		4	0
Sensitivity to Ambient Temperature	2		4	0
Site Sources				
Stack Internal Area		1.60204E-06	0	2.56653E-12
Uncertainty in Flow Measurement Device Calibration	1		1	0
Uncertainty in Differential Pressure Device Calibration	1		1	0
Time	0		0	0
L-Type Blockage Test		0.00%	0	0
Repeatability at single point			0	0
Swirl/Pitch Meter Position	2		4	0
Temperature on site			0	0
Pressure on Site			0	0
Humidity on Site	0		0	0
Laboratory Sources				
Uncertainty due to Caibration	2		4	0
Repeatability (hPa)		0.97	0	0.9409
Repeatability (m/s)		0.26		
Linearity	2		4	0
Measurement of Duct Diameter		0.67	0	0.4489
Effect of Swirl Angle (Clockwise)		1.2	0	1.44
Effect of Swirl Angle (Anti-clockwise)		0.88	0	0.7744
Sum of squares			31.6267	
		Total Uncertainty	5.6	

Client	Groundhog (UK) Ltd	Date	09/03/2026
Emission Point ID	Static Spray Booth RHS	Sample Number	112960/4

Measured TOC concentration (mgC/m³)	64.60	Calibration Value (mg/m³)	1574.58
ELV	N/A	Scale used (mg/m³)	1964.30

Performance Characteristic		Specification	Uncertainty	
Response Time (seconds)	3	<200s		
Logger Sampling Interval (seconds)	10			
Measurement Period (minutes)	383			
Number of Readings in Measurements	2298			
Standard dev Repeat @ Zero	0.39	≤±2.0% Range	u _{r0}	N/A
Standard dev Repeat @ Span	0.76	≤±2.0% Range	u _{rs}	0.02
Deviation from Linearity (±)	0.02	≤±2.0% Range	u _{fit}	0.23
Zero Drift (During Measurement)	0.06	% full scale	u _{odr}	0.93
Span Drift (During Measurement)	0.49	% full scale		
Losses in the Line (Leak)	0.32	<2% of value	u _{leak}	0.12
Sensitivity to Sample Gas Flow	1.6	<2.0% of the certification range	u _{spres}	0.00
Sensitivity to Ambient Temp @ Span	1.4	<5.0% of the certification range	u _{temp}	0.00
Sensitivity to Ambient Temp @ Zero	-2.4	<5.0% of the certification range		0.00
Influence of voltage variations	0.50	<2.0% of the certification range	u _{volt}	0.00
Effect of oxygen	0.71	<2% of the certification range	u _{int}	0.00
Measurement Uncertainty				
Combined Uncertainty (mg/m ³)	0.97			
Coverage Factor k	2			
Expanded uncertainty (mg/m ³)	1.94			
Expanded Uncertainty (% ELV)	N/A			
Expanded uncertainty (mg/m³)	1.94			
Expanded uncertainty (% Value)	3.00			

Requirement in EA TGN M2 is for uncertainty to be < ±15% of the measured value

ISO 16911 L-Type Pitot Uncertainty

Client	Groundhog (UK) Ltd
Site	Aberdulais
Emission Point	Static Spray Booth RHS
Date	09/03/2026
Sample Number	112960/4

<u>Uncertainty</u>	<u>Estimated Value %</u>	<u>Measured Value %</u>	<u>sqr est</u>	<u>sqr meas</u>
Equipment Sources				
Master System Velocity Measurements		1	0	1
Master System Air Density Measurement		0.15	0	0.0225
Tape Measure		2	0	4
Testo			0	0
Thermocouples		1	0	1
Sensitivity to Atmospheric Pressure	2		4	0
Sensitivity to Ambient Temperature	2		4	0
Site Sources				
Stack Internal Area		1.60204E-06	0	2.56653E-12
Uncertainty in Flow Measurement Device Calibration	1		1	0
Uncertainty in Differential Pressure Device Calibration	1		1	0
Time	0		0	0
L-Type Blockage Test		0.00%	0	0
Repeatability at single point			0	0
Swirl/Pitch Meter Position	2		4	0
Temperature on site			0	0
Pressure on Site			0	0
Humidity on Site	0		0	0
Laboratory Sources				
Uncertainty due to Caibration	2		4	0
Repeatability (hPa)		0.97	0	0.9409
Repeatability (m/s)		0.26		
Linearity	2		4	0
Measurement of Duct Diameter		0.67	0	0.4489
Effect of Swirl Angle (Clockwise)		1.2	0	1.44
Effect of Swirl Angle (Anti-clockwise)		0.88	0	0.7744
Sum of squares			31.6267	
		Total Uncertainty	5.6	

APPENDIX 7

(Annual calibration details & analysis data retained at permanent laboratory)