# CERTIFICATION OF CALIBRATION

4533

**Date Of Calibration:** 30-Jul-2019

**Certificate Number**: G504647_1/23646

Issued by: QED Environmental Systems Ltd.

**Customer:** **Socotec UK Limited**
ESG House Bretby Business Park Ashby Road
Burton upon Trent Staffordshire DE15 0YZ UNITED KINGDOM

**Description:** Gas Analyser

**Model:** GA5000

**Serial Number:** G504647

**UKAS Accredited results:**

Results after adjustment :

| Methane ($CH_4$) | | |
|---|---|---|
| **Certified Gas (%)** | **Instrument Reading (%)** | **Uncertainty (%)** |
| 5.0 | 4.9 | 0.41 |
| 15.0 | 15.1 | 0.64 |
| 50.0 | 49.4 | 0.94 |

| Carbon Dioxide ($CO_2$) | | |
|---|---|---|
| **Certified Gas (%)** | **Instrument Reading (%)** | **Uncertainty (%)** |
| 5.0 | 4.8 | 0.43 |
| 15.0 | 14.7 | 0.70 |
| 50.0 | 50.4 | 1.1 |

| Oxygen ($O_2$) | | |
|---|---|---|
| **Certified Gas (%)** | **Instrument Reading (%)** | **Uncertainty (%)** |
| 21.1 | 21.2 | 0.31 |

The inwards assessment was carried out 16-Jul-2019.
The maximum adjustment was less than the inwards assessment uncertainty.
Inwards assessment data is available if requested.

All concentrations are molar.

$CH_4$, $CO_2$ readings recorded at : 32.0 °C ± 2.5 °C

O2 readings recorded at : 22.2 °C ± 2.5 °C

Barometric Pressure : 0994 mbar ± 4 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure LP004.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:104 IGC Instance:103



www.qedenv.com +44 (0) 333 800 0088 sales@qedenv.co.uk

QED Environmental Systems Ltd. Cyan Park - Unit 3, Jimmy Hill Way, Coventry, CV2 4QP, UNITED KINGDOM

Registered in England and Wales 1898734

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*The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.*

Calibrations marked 'Non-UKAS Accredited results' on this certificate have been included for completeness.

**Non-UKAS accredited results after adjustment:**

| Barometer (mbar) | |
|---|---|
| **Reference** | **Instrument Reading** |
| 994 | 993 |

| Additional Gas Cells | | |
|---|---|---|
| **Gas** | **Certified Gas (ppm)** | **Instrument Reading (ppm)** |
| CO | 519 | 519 |
| $H_2S$ | 251 | 251 |

| Internal Flow | |
|---|---|
| **Applied (l/hr)** | **Instrument Reading (l/hr)** |
| 5.00 | 4.90 |
| 10.00 | 9.80 |

**Date of Issue :** 31-Jul-2019 **Approved by Signatory**

Laura McBride

Laboratory Inspection

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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# SERVICE REPORT

Issued by: QED Environmental Systems Ltd.

**Customer Name:** Socotec UK Limited

**Model:** GA5000

**Part Number:** GA5KB0C0-101

**Serial Number:** G504647

**Date of Service:** 30th - July - 2019

**Service Engineer:** David Edwards

**Calibration Engineer:** Suk Balrey

**Verification / Approved By:** Laura McBride

**Signature:**

## Reason for Return (inc. Customer Comments):

Returned for full service and calibration

## Service Comments/Feedback:

Thank you for returning your gas analyser to the Geotech Service Centre for full service and calibration. We are pleased to inform you that the analyser was received and fully assessed by one of our experienced Service Engineers and no significant faults or issues were observed during the assessment. Our extensive service was carried out, and any necessary components replaced. The analyser has successfully passed all of our rigorous testing and quality checks and has been calibrated using our bespoke, state of the art calibration facility.

We have replaced the battery because it is over 2 years old. This is in accordance to the battery cell manufacturer's recommendation.

The CO and H2S electrochemical sensors have been replaced due to them being over 2 years old in accordance with the manufacturer's recommendations, and also as a proactive measure based on our experience of the typical lifetime of these types of sensor.

For further information about how to get the best use from your instrument please visit our YouTube channel http://www.youtube.com/GeotechTV and on our Website http://www.geotechuk.com

If you require any further assistance with your instrument please email our Technical Support Team at technical@geotech.co.uk or call us on +44 1926 338111 (Monday to Thursday 08.30 - 17.00 & Friday 08.30 - 15.30) UK time zone.

**Next Service Due:** 30-Jan-2020


| 17025 | 5 | 50 | 65 | 7,384 | 340 | 25 |
|---|---|---|---|---|---|---|
| Our ISO accreditation for our customised auto-calibration facilities | Number of days we aim to complete your service within | Number of checks instruments are subject to when serviced | Number of countries from which we service instruments /accessories each year | Number of calibrations completed in last 12 months | Minimum number of service instruments we process each month | Cost (in £) of fully insured analyser collection for our UK customers |

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Issued by: QED Environmental Systems Ltd.

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