

# CERTIFICATION OF CALIBRATION



Date Of Calibration: 13-May-2021

Certificate Number: G503807\_1/28068

Issued by: QED Environmental Systems Ltd.

**Customer:** Structural Soils Limited

Spring Lodge 172 Chester Road Helsby  
Frodsham Cheshire WAG 0AR UNITED KINGDOM

**Description:** Gas Analyser

**Model:** GA5000

**Serial Number:** G503807

## UKAS Accredited results:

Results after adjustment :

| Methane (CH <sub>4</sub> ) |                        |                 |
|----------------------------|------------------------|-----------------|
| Certified Gas (%)          | Instrument Reading (%) | Uncertainty (%) |
| 5.0                        | 4.9                    | 0.072           |
| 15.0                       | 15.0                   | 0.13            |
| 60.0                       | 59.9                   | 0.42            |

| Carbon Dioxide (CO <sub>2</sub> ) |                        |                 |
|-----------------------------------|------------------------|-----------------|
| Certified Gas (%)                 | Instrument Reading (%) | Uncertainty (%) |
| 5.0                               | 4.9                    | 0.074           |
| 15.0                              | 14.8                   | 0.13            |
| 40.0                              | 40.0                   | 0.29            |

| Oxygen (O <sub>2</sub> ) |                        |                 |
|--------------------------|------------------------|-----------------|
| Certified Gas (%)        | Instrument Reading (%) | Uncertainty (%) |
| 21.4                     | 21.5                   | 0.25            |

The inwards assessment was carried out 07-May-2021.

The maximum adjustment is larger than the specification limit.

Inwards assessment data is available if requested.

All concentrations are molar.

CH<sub>4</sub>, CO<sub>2</sub> readings recorded at : 32.1 °C ± 2.5 °C

O<sub>2</sub> readings recorded at : 23.2 °C ± 2.5 °C

Barometric Pressure : 0996 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.

Instrument has passed calibration as the measurement result is within the specification limit. The specification limit takes into account the measurement uncertainty.

The results relate only to the item calibrated

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:112 IGC Instance:111

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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 |
| 996              | 996                |

| Additional Gas Cells |                     |                          |
|----------------------|---------------------|--------------------------|
| Gas                  | Certified Gas (ppm) | Instrument Reading (ppm) |
| CO                   | 486                 | 485                      |
| H <sub>2</sub> S     | 53.6                | 54                       |

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

Date of Issue : 17-May-2021

Approved by Signatory

Dawn Hemings

Laboratory Inspection

End of Certificate

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# SERVICE REPORT



Issued by: QED Environmental Systems Ltd.

|                       |                          |                              |               |
|-----------------------|--------------------------|------------------------------|---------------|
| <b>Customer Name:</b> | Structural Soils Limited | <b>Date of Service:</b>      | 17-May-2021   |
| <b>Model:</b>         | GA5000                   | <b>Service Engineer:</b>     | David Edwards |
| <b>Part Number:</b>   | GA5KB0BO-101             | <b>Calibration Engineer:</b> | Suk Balrey    |
| <b>Serial Number:</b> | G503807                  |                              |               |

**Verification / Approved By:** Dawn Hemings

**Signature:** 

## **Reason for Return (Inc. Customer Comments):**

Returned for full service and calibration

## **Service Comments/Feedback:**

This instrument was tested against known certified gas values and the user calibration was seen to be worse than the factory calibration for the following channels: CH4 CO2 . Common reasons for this are an out of date or poor user calibration. Regular user calibrations carried out in accordance with our operating manual will help to optimise performance. For further information on user calibration please visit the FAQ section of our website.

Thank you for returning your gas analyser to the QED 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.

We have replaced the battery because it is over 2 years old.

This is in accordance to the battery cell manufacturer's recommendation.

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.

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 <https://qedenv.com>

If you require any further assistance with your instrument please email our Technical Support Team at [technical@qedenv.co.uk](mailto:technical@qedenv.co.uk) or call us on +44 (0) 333 800 0088 (Monday to Thursday 08.30 - 17.00 & Friday 08.30 - 15.30) UK time zone.

**Next Service Due:** 13-Nov-2021

|                                                                      |                                                       |                                                           |                                                                              |                                                    |                                                             |                                                                 |
|----------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|
| 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 | Certified fully insured analyst collection for our UK customers |

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|                                                                      |                                                       |                                                           |                                                                              |                                                    |                                                             |                                                                       |
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