



## INTRODUCTORY STACK TESTING

DECEMBER 2020, ONLINE

### COURSE OVERVIEW

This fantastic course provides a comprehensive overview of the science of stack testing. Presented by expert stack tester, Stuart Inglis, this course covers the key principles then delves into the US EPA methods, teaching how each method works and why. The course topics include:

- Overview of stack emissions testing
- Key principles
- Application of safe systems of work
- Periodic and continuous monitoring
- Selection of sampling locations and points
- Selection and application of methods
- Reporting

The standard registration fee applies until 23 November 2020.

### DATES/TIMES

The course will be presented in six, 2-hour webinars in December 2020.

1 December 2020 • 1 to 3 pm AEDT	2 December 2020 • 1 to 3 pm AEDT	3 December 2020 • 1 to 3 pm AEDT	8 December 2020 • 1 to 3 pm AEDT	9 December 2020 • 1 to 3 pm AEDT	10 December 2020 • 1 to 3 pm AEDT
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Participants that miss a live session can catch up using the recording. The recording will not be available for non-participants to purchase.



### PRESENTER

#### **Stuart Inglis, Operations Manager, Emission Assessments**

Stuarts holds a Bachelor of Science Degree in Applied Environmental Sciences and has 20 years' experience in stack emissions monitoring in the UK, Europe, Middle East and Australia. Projects include working on behalf of the UK Environment Agency for legislative compliance, research and development of new plant processes, Waste to Energy Plant and Gas Turbine Commissioning.

Stuart is an experienced trainer; with a decade of experience training staff to MCERTS standard as well as conducting formal training for industry clients and regulatory licensing officers.

Stuart is a fully endorsed MCERTS Level 2 Team Leader (UK professional stack testing qualification)



## **COURSE PROGRAM**

### **Session 1: 1 December 2020, 1 pm – 3 pm AEDT**

Welcome and introductions

Overview of stack emission testing

- Why, what where?

Key principles

- Terminology
- Representative sampling
- Traceability
- Techniques
- Selecting a method

### **Session 2: 2 December 2020, 1 pm – 3 pm AEDT**

US EPA Method 1: Selection of sample location

- Number of sample points
- Ideal / non ideal /non compliant sampling planes
- Location of sampling points
- Practical considerations

### **Session 3: 3 December 2020, 1 pm – 3 pm AEDT**

US EPA Method 2: Velocity and flow measurement

- Equipment: pitot tubes etc
- Units
- Bernoulli's equation
- Example calculations

US EPA Method 3: Oxygen & Carbon dioxide

- Sampling techniques
- Analytical techniques
- Molecular weight calculations



**Session 4: 8<sup>th</sup> December 2020, 1 pm – 3 pm AEDT**

**US EPA Method 4: Moisture**

- Principle of measurement
- Common problems
- Calculations

**US EPA Method 5 & 17: Total Particulate Matter**

- Method selection
- Equipment
- Principle of measurement
- Isokinetic sampling
- QA/QC

**Session 5: 9<sup>th</sup> December 2020, 1 pm – 3 pm AEDT**

**Combustion gas analysers USEPA Method 6C, 7E and 10**

- Sulphur dioxide
- Oxides of nitrogen
- Carbon monoxide
- Principles of sampling and analysis
- Calibrations
- QA/QC

**Wet chemical techniques USEPA Method 6, 8, 26 and 26A**

- Oxides of sulphur, hydrogen halide and halogen emissions
- Principles of measurement
- Sample trains and reagents

**Session 6: 10<sup>th</sup> December 2020, 1 pm – 3 pm AEDT**

**USEPA Method 18**

- Volatile organic compounds (VOCs)
- Bag and tube sampling
- Other VOC measurement options: US EPA Method TO17, TO14A and TO15

**Reporting**

- IANZ/NATA accreditation
- Measurement uncertainty



## WHO SHOULD ATTEND?

- Stack testing professionals
- Consultants/regulators who specify stack emission monitoring programs
- Air quality modellers who use stack emission monitoring data for input into air quality models
- Industry
- Regulators who oversee licensing and emission compliance
- Auditors

## COURSE MATERIALS

The course materials are a pdf course handbook containing the course slides. A pdf course certificate will also be provided.

## CAQP

This course attracts 12.5 Certified Air Quality Professional (CAQP) continuing professional development (CPD) points.

## PRICING

### Standard Registration – available to 23 November 2020

- Member: AU\$1,100
- Non-member: AU\$1,430
- Student / retiree: AU\$550

### Late Registration – after 23 November 2020

- Member: AU\$1,200
- Non-member: AU\$1,530
- Student / retiree: AU\$650

## DISCOUNTS

Only one discount type is applicable per registration, the following discounts are available:

- Multiple registration discount: three or more registrations from the same organisation receive a 20% discount. Apply the coupon code [Multi20](#) at the checkout.
- Government employee discount: 10% discount is available for all government employees who are CASANZ members. Apply the coupon code [Government](#) at the checkout.

## REGISTRATION

Registration is via the CASANZ website: [www.casanz.org.au](http://www.casanz.org.au)

## ENQUIRIES

Please contact Janelle Wildish for all enquires relating to this course: [web@casanz.org.au](mailto:web@casanz.org.au)