



## 2019 MINE VENTILATION AND ENVIRONMENTAL ENGINEERING COURSE

Perth, Western Australia

First workshop 22 September 2019 to 28 September 2019

Second workshop 16 March 2020 to 19 March 2020

Dear Sir/Madam,

I would like to invite you to apply for entry in the next Mine Ventilation and Environmental Engineering Course. This year the course is being held at the Parmelia Hilton Hotel, Perth, Western Australia. As in previous years, the course will be presented by Dr Roy Moreby of Morvent Mining Ltd on behalf of Simtars.

The course will be delivered as two face-to-face workshops and mentoring program and assessments that will be completed at your workplace. Prior to the first workshop, you will be provided with pre-readings.

The course consists of two nationally accredited units of competency, namely:

- RIIUND601D - Establish and maintain the ventilation management system
- RIIUND603D - Manage, operate and maintain the mine ventilation system

There are two options for enrolment in this course, as follows:

### **Option 1: Assessable enrolment**

In this option, you will be assessed and upon successful completion of assessments, you will be issued with a Statement of Attainment for the nationally accredited units of competency from Simtars (RTO 1828).

### **Option 2: Non-assessable enrolment**

In this option, you enrol in training only and do not complete the assessments. There is the option to attend both or just one of the two workshops. After training, you will receive a non-accredited Certificate of Completion.

All course costs are inclusive of lunch, morning and afternoon tea/coffee, full set of notes, calculator and an Environmental Engineering text book. I have attached with this letter an application for enrolment together with a general overview from Dr Moreby on what the course involves, including course entry requirements.

To apply for a place in the course, complete the attached application for enrolment form and e-mail it back to Clemcorp via [sales@clemcorp.com.au](mailto:sales@clemcorp.com.au). Since Clemcorp Australia is recruiting learners on behalf of Simtars, we will arrange for you to undertake a BKSB test online and forward your application to Dr Moreby (who will be training and assessing learners in this course). You will be notified once your application has been assessed.

Upon your application for enrolment being approved, a payment will need to be made to Clemcorp to secure your enrolment into the course. Clemcorp Australia unfortunately cannot offer you corporate rates at any hotels. You will have to book your own accommodation at a hotel of your choice.

We are proud to once again be involved with this annual course, and look forward to hearing from you in the near future.

If you have any queries please do not hesitate to contact me on +61 8 9406 3000 or [sholbeck@clemcorp.com.au](mailto:sholbeck@clemcorp.com.au).

Kind Regards,  
Clemcorp Australia

A handwritten signature in red ink, appearing to read 'Saul Holbeck', written over a light blue circular stamp.

Saul Holbeck  
Technical Services Manager



## COMPANY DETAILS FORM

Learner name <i>(Please print)</i>	
Minesite – Address of Accounts Department and name of Manager	
Contact details	Direct Phone No:  Fax:  Email:

**A valid Purchase Order and Application for Enrolment MUST accompany this company details form. Please note that your application for enrolment must be approved and upon notification of your acceptance into this course, the purchase order will be processed.**

.....  
(Authorised by Minesite)



## MINE VENTILATION AND ENVIRONMENTAL ENGINEERING COURSE

Perth, Western Australia

First workshop 22 September 2019 to 28 September 2019

Second workshop 16 March 2020 to 20 March 2020

Roy Moreby is pleased to announce the 2019 Mine Ventilation and Environmental Engineering course which is to be held in Perth.

### Course History and Background

The course was originally developed by Dr Mike Howes (RHP) from the first delivery by him in Australia 38 years ago. The ventilation training courses have become benchmarks in practical mine ventilation education and over 500 personnel from mines, consulting companies and State Mining Inspectorates have attended.

The course is designed for both practicing mine ventilation personnel and for those with either a planning or a statutory responsibility involving mine ventilation and environmental engineering.

Our metalliferous ventilation officer training is recognised by the Mining Safety and Health Advisory Committee as meeting the competency requirements of s54A(3)(b) of the *Mining and Quarrying Safety and Health Act 1999 (Qld)* for undertaking the role of Ventilation Officer in an underground metalliferous mine in Queensland. To become an appointed Ventilation Officer in an underground metalliferous mine in Queensland, in addition to successfully completing our course, learners will also need to successfully complete a written invigilated exam on or before the 18th September 2021. Learners in other jurisdictions should check with their regulator about whether this course will meet the requirements for appointment as a ventilation officer in that jurisdiction.

### Course length

This course is delivered over a twelve (12) month period.

### Delivery location/s

- Face-to-face workshops are delivered at Parmelia Hilton Hotel, Perth.
- Practical assessments and the mentoring program are to be undertaken in your workplace.

### Modes of delivery

- Pre-readings (prior to workshop 1)
- Face-to-face workshops
- Practical assessments and mentor program in your workplace
- Telephone and email support direct from your trainer (after each workshop)

### Training

#### Face-to-face workshops

Face-to-face training is delivered during two (2) workshops at the Parmelia Hilton Hotel in Perth. Dates for the workshops are as follows:

- **Workshop 1:** 22 September 2019 to 28 September 2019 (6 days)
- **Workshop 2:** 16 March 2020 to 19 March 2020 (4 days)



The first six day workshop covers theory and application of planning strategies for mine ventilation and related topics such as heat, dust and gases. This provides the fundamentals and background to ventilation design and application to ventilation planning with examples. The development of numerical methods are emphasised that allow alternate systems to be evaluated from an effectiveness and financial standpoint. Actual mine examples are used where applicable to illustrate both methods and derivation of cost effective solutions. To obtain maximum benefit, learners will be supplied with calculators and plenty of paper.

The second four day workshop covers the application of Ventsim to hard rock mine ventilation circuits together with problem solving and a day of revision including case studies.

### **Pre-readings**

Prior to the first workshop, you will be given a series of pre-course readings to read before attending to the first workshop. It is estimated that these pre-course readings will take learners 30 hours to complete.

### **Mentor program**

You will be required to participate in a mentoring program at your mine. This is an essential part of the training, and involves you meeting with key people throughout your mine, to complete activities. Whilst not assessed, these mentoring activities are an integral part of your learning and will enable you to practice the skills you learn in your training. Simtars will provide you with a mentor handbook and your assessor Dr Moreby will provide you and your mentor with support by email and telephone.

## **Assessment Options**

### **For learners in Option 1 (Assessable Enrolment)**

To obtain the units of competency, you will be required to successfully complete assessment as follows:

In this course, there are six (6) assessments, as follows:

- Two (2) workplace projects completed in your workplace
- Four (4) written assessments that you take away and complete at home/work

### **Supervisor or a content expert verification**

You will need to organise your workplace supervisor or a content expert to sign to confirm your workplace projects were completed by you and that you have discussed your findings with them. Our assessor will contact your supervisor or content expert to discuss your assessments and verify the information given.

You can request an extension of time to submit assessments, see the Simtars Learner Handbook for more information.

### **For learners in Option 2 (Non-Assessable Enrolment)**

Learners in non-assessable entry will not be assessed.

## **Third-party provider details**

### **Marketing and recruitment**

Marketing and recruitment is being conducted by the following Third-Party:

**Clemcorp (WA) Pty Ltd ACN 115 959 683 T/A Clemcorp Australia**

Telephone: +61 (8) 9406 3000

Email: [sales@clemcorp.com.au](mailto:sales@clemcorp.com.au)



## Training and assessment

Your training, assessment and/or support services are to be conducted by the following Third-Party:

### Dr Roy Moreby

Morvent Mining Ltd

Telephone: +44 (0) 1752 691 151

Email: [roy.moreby@btinternet.com](mailto:roy.moreby@btinternet.com)

The course will be led by Dr Roy Moreby who has been involved in mine ventilation and environmental engineering for 38 years. His experience includes 14 years working in the UK, South African and Australian hard rock mines, 5 years working in Australian coal mines followed by 18 years consultancy to the hard rock and coal mine sectors in Australia, North America and China. From 2000, he has been an Associate Professor at the School of Mining Engineering at the University of New South Wales where he has been involved with the development and delivery of ventilation courses to both undergraduates and industry learners. This includes training of Australian statutory coal mine ventilation officers.

In Option 1, upon successful completion of assessments, you will be issued with a Statement of Attainment from Simtars (RTO 1828).

## Course structure

The course consists of the following nationally accredited units of competency:

- RIIUND601D - Establish and maintain the ventilation management system
- RIIUND603D - Manage, operate and maintain the mine ventilation system



These units are being delivered and assessed in a clustered arrangement and as such they are not offered as stand-alone units. Studying the two (2) units together will provide you with the broad range of skills and knowledge that industry stakeholders have told us is required by Ventilation Officers.

## Training product currency

All units in this course are current.

## Entry requirements

To enrol in this course you must:

- You must be employed in a working underground mine or have permitted access to:
  - an underground mine and its safety and health management system (For Option 1 - to undertake assessment); and
  - a supervisor or content expert at the mine (for Option 1 - to verify workplace projects).
- You must have a minimum of two (2) years recent operational experience in an underground mine.
  - Note that 'recent' means experience gained within the previous four (4) years, and 'operational experience' means a position in which you work/ed underground at least twice a week when onsite, for example: underground worker, underground supervisor, underground safety officer or surveyor, mining engineer with some underground responsibility, e.g. drill and blast engineer, production engineer, planning engineer.
- You need to be proficient in the use of Excel before starting the course.
- Due to legal requirements in various states and territories, you must meet the age restrictions for entering this course as set out in the table below.



Location of mine	Minimum age	Notes
Queensland	18 years	
Tasmania	19 years	Note: from 2022 onwards, this will rise to 20 years of age
New South Wales	20 years	
South Australia	20 years	
Western Australia	20 years	
Victoria	20 years	
Northern Territory	19 years	Note: Age requirement is 19 unless: <ul style="list-style-type: none"><li>You previously received permission to leave school earlier than 17; and</li><li>You have completed a minimum of two (2) full years operational in an underground mine (as set out above); and</li><li>You meet the Language, Literacy and Numeracy (LLN) requirements (see below).</li></ul>

## Materials and equipment required

To study in this course, you must provide the following materials and equipment:

- Laptop with internet access, and licenced copies of [Microsoft Excel](#) and [Ventsim](#)
- Access to an underground metalliferous mine (including access to the SHMS)
- Agreement from your supervisor/content expert to verify your assessment activities
- Access to mentors (worksite personnel) at your mine (or in your mining company)

## How to enrol in this course

To apply for enrolment in this course, please complete the attachment application for enrolment, and forward it to Clemcorp:

- Phone: +61 (8) 9406 3000
- Email: [sales@clemcorp.com.au](mailto:sales@clemcorp.com.au)

Clemcorp will arrange for you to be enrolled in BKSB online test and will forward your application to Dr Moreby. Your application will be reviewed by Dr Moreby prior to you being offered a place in the course.

## Foundation skill requirements

To study in this course, you will be required to have core skills at level 5 - or the ability to reach level 5 with support – on the Australian Core Skills Framework (ACSF). Simtars has BKSB eLearning solution to assess literacy, numeracy, and foundation skills. Prior to confirmation of enrolment you will be sent an email with a link to BKSB to complete both an English and Maths Assessment. If you do not reach the required foundation level, the BKSB tool can provide tutorials to help you reach the required foundation skill level. For more information about Foundation Skills, see the 'Choosing your Course' section in Simtars' Learner Handbook.



## Fee Structure

Option	Fees
Option 1 – Attending both workshops and completing all assessments (10 days)	\$16,000
Option 2(a) – Attending <b>both</b> workshops and <b>not</b> completing any assessments (10 days)	\$10,750
Option 2(b) – Attending only workshop <b>1</b> and <b>not</b> completing any assessments (6 days)	\$7,750
Option 2(c) – Attending only workshop <b>2</b> and <b>not</b> completing any assessments (4 days)	\$5,000

Accommodation not included in this cost. Government funding or subsidies are not available.

*Includes:* Course material, pre-reading material, morning tea and lunch during each of the workshops.

## Payment methods

Clemcorp offer the following payment methods for this course:

- Credit card payments
- Purchase order (for approved companies only)

For more information about payment terms, see the 'Fees and Refunds' section of Simtars' Learner Handbook.

## Recognition of prior learning (RPL)

You can apply for recognition of prior learning for each of the units of competency in this qualification. You will need to supply information on your work history and samples of work, and may need to undertake assessments and/or an interview to determine whether you have met the competency standards. RPL is assessed on a case-by-case basis. You can read more about RPL in our Learner Handbook or contact us to discuss your RPL options.

## Credit transfer (CT)

Note that given the industry regulator in Queensland has decreed that Ventilation Officers must obtain these statutory competencies either from Simtars or through the University of New South Wales Graduate Diploma program, then credit transfers will not be given for these units where they have been completed at other training organisations. Similarly, a credit transfer will not be offered where learners have completed Simtars' coal ventilation course offered in Mackay.

# 2019 MINE VENTILATION AND ENVIRONMENTAL ENGINEERING COURSE

## Perth, Western Australia

### Mine Ventilation and Environmental Engineering Course

<b>Pre course work</b>	Enrolment and registration Distribution of course material Pre reading
<b>First Workshop</b>	
<b>Day 1</b>	Fluid Flows and Fans 1. Fundamentals units and relationships 2. Pressure loss due to friction, discontinuities and obstructions 3. Bernoulli's equation 4. Types of fans and fan characteristics 5. Fan duty and fan laws
<b>Day 2</b>	Network Analysis 1. Auxiliary ventilation 2. Network analysis and computer programs 3. Pressure quantity surveys and monitoring 4. Ventilation circuits and ventilation control devices 5. Ventilation planning process <b>6. Ventilation management plan</b>
<b>Day 3</b>	Heat and Refrigeration 1. Psychometric properties of moist air 2. Sources of heat and transfer processes 3. Heat stress incidents and management plans 4. Refrigeration systems <b>5. Heat stress management plan</b>
<b>Day 4</b>	Gases, gas laws and gas management 1. Occurrence, properties and effects of mine gases 2. Unit, calculations and gas laws 3. Sources and occurrence of mine gases 4. Flammable and explosive gases 5. Ionising radiation
<b>Day 5</b>	Gas monitoring and mine fires 1. Gas monitoring systems 2. Calibration and maintenance 3. Causes of fires and explosions 4. Types of fires and detection of mine fires 5. Mine fires, fighting and control
<b>Day 6</b>	Respirable and flammable dust and coal mines 1. Properties, physiological effects and measurement of dust 2. Sources and control of dust <b>3. Dust management plan</b> <b>4. Coal mine specific items addressed by units</b>

<b>Pre course work</b>	Written and project assessments 1 to 6 Mentoring Program
<b>Second Workshop</b>	
<b>Day 7</b>	Ventsim - Ventilation 1. Basic navigation, setting and buttons 2. Basic example mine - hand calcs and Ventsim - airflow 3. Fault finding and errors in actual demo mine 4. Commence building assignment mine 5. Assignment mine
<b>Day 8</b>	Ventsim - Heat and refrigeration 1. Complete assignment mine 2. Basic heat settings, buttons and navigation 3. Basic example mine - hand calcs and Ventsim - heat 4. Fault finding and errors in demo mines 5. Commence heat exercises mine in assignment mine
<b>Day 9</b>	Ventsim - Contamination and site models 1. Dynamic simulations in demo mines 2. Assignment mine exercise dust and blast fumes 3. Auditing mine ventsim models 4. Review of site models
<b>Day 10</b>	Revision all topics using case studies Discussion of specific site issues arising from assessments Revision all topics using case studies
<b>Over six months</b>	Mentoring program objectives (total of 95 hours over six (6) months ) 1. Roles and responsibilities of an appointed ventilation officer 2. Technical services input to the design and specification of ventilation and associated infrastructure requirements. 3. Maintenance and reliability issues associated with mine ventilation infrastructure. 4. Ventilation and health and safety issues under the control of workplace supervisors 5. Compliance with regulatory requirements and the future direction of regulations and standards that may apply to ventilation and associated hazard management.

<b>Training and Assessment for RIIUND601D and RIIUND603D</b>	
<b>Training</b>	<i>Hours</i>
Pre reading for Workshop 1	30
Workshop 1	42
Workshop 2	28
Mentoring program (over 6 months)	95
<b>Total training time</b>	<b>195</b>
<b>Assessment</b>	
Ventilation theory	16
Heat and refrigeration theory	4
Gases and dust theory	8
Mine ventilation circuit design	8
Ventilation surveys, heat and modelling	24
Management plans and emergency pre	24
<b>Estimated total assessment time</b>	<b>68</b>

<b>Course Material</b>
Notes hardcopy and on a USB
Spreadsheets on a USB
Additional reference material on a USB
Ventilation Text Book
Calculator
Assessments hardcopy and on a USB