

Mine Safety Technology Centre

The Mine Safety Technology Centre is a technical based facility at Thornton in the Hunter Valley. The state-of-the-art centre was built in 2004 and is operated by NSW Department of Primary Industries Mineral, Resources Division.

It provides specialist expertise on many critical aspects of mine health and safety.

The main services provided at the centre include:

Analytical Services

- Gas analysis.
- Gas monitor calibration for gases such as CH₄, CO₂, O₂, NO, NO₂, H₂S, and CO.
- Calibration of instruments to suit specific client needs.
- Calibration of gas mixing pumps, flow meters and mass flow controllers.
- Analysis of coal mine roadway dust samples.

Mobile Gas Laboratories

- On-site diesel exhaust emission testing – gas and smoke levels.
- On-site gas analysis, covering coal mine heatings / fires, recovery and emergency operations.

Mining Occupational Hygiene

- Exposure to chemicals in the workplace.
- Noise and illumination surveys.

Equipment Compliance Testing & Certification

- Gas monitors – performance testing.
- Breathing apparatus:
 - filter self rescuers
 - chemical oxygen rescuers
 - compressed air / oxygen sets.
- Materials testing - characterisation of product flammability and antistatic properties.



Scientific Officer testing carbon monoxide filter self rescuers for compliance with Australian Standards using lung simulating machines

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Scientific Officers testing gas samples from underground mines using Wosthoff pumps and Gas chromatography

Electrical Safety Evaluations

- Equipment used in underground mines.

State-of-the-art Technology

The centre is staffed by specialist mine safety scientists and engineers, who provide testing, research and training. The role of the centre is pivotal in ensuring that the highest standards of mine safety are set and maintained. At capacity, the centre will process thousands of samples per year and employ up to twenty staff.

Each of the ten gas types used at the centre is reticulated at high and low pressures. Over 4000m of pipe work has been installed, with 20% of this in stainless steel. Each gas line type was carefully selected for the quality and type of gas required in the laboratory areas.

All copper lines are similar to medical grade, and oxygen-cleaned. The stainless steel piping is oxygen-cleaned and is suitable for up to 99.9999 grade pure gases.

The gas reticulation system is supplied from automatic manifolds; these are separated into two zones, non flammable and oxidising, and flammable and toxic.

For further information contact:

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (May 2005). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.