Title	**Respond to, locate and classify gas escapes in a gas network**		
Level	**4**	**Credits**	**15**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of documentation, company procedures, hazards, and equipment for responding to and locating gas escapes; respond to and identify a gas escape; carry out a survey to locate and classify a gas escape; and complete reporting and documentation.

Classification	Gas Industry > Gas Network Operations

Available grade	Achieved

Guidance Information

1 This unit standard is intended for, but is not limited to, workplace assessment. The range statements relate to enterprise specific equipment, procedures, and processes.

2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, company procedures and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the:
Gas Act 1992;
Health and Safety at Work Act 2015;
Resource Management Act 1991;
Gas (Safety and Measurement) Regulations 2010;
AS/NZS 4645.1:2018 *Gas distribution networks – Network management*;
AS/NZS 4645.2:2018 *Gas distribution networks – Steel pipe systems*;
AS/NZS 4645.3:2018 *Gas distribution networks – Plastics pipe systems*;
ISO 9000 *Quality Management*;
and any subsequent amendments and replacements.

4 References
Australian standards (AS) may be found at www.standards.org.au;
Australian/New Zealand standards (AS/NZS) may be found at www.standards.govt.nz;
International Standards Organisation (ISO) standards may be found at www.iso.org.

5 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

6 Definition
Company procedures mean the documented methods for performing work activities, and include health and safety, operational, environmental, and quality management requirements. They may refer to legislation, regulations, guidelines, standard operating procedures, manuals, codes of practice, or policy statements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of documentation, company procedures, hazards, and equipment for responding to and locating gas escapes.

Performance criteria

1.1 Documentation and company procedures for responding to and locating gas escapes are located and interpreted.

Range may include – company standard, safe work procedure, operating procedure, work instruction, equipment operating manual, job hazard analysis, job risk assessment.

1.2 Documentation and instructions for a specified job are obtained.

Range may include – job card, site location, network drawings, other utility plans, risk assessment, traffic management plan.

1.3 Priorities for responding to gas escapes are described.

Range safeguard personnel, safeguard public, safeguard property.

1.4 Considerations for investigating gas escapes are described.

Range source of report, site assessment and safety, weather conditions, site control, safety of buildings, escalation, tracking of gas, other utilities, street furniture, continuous monitoring of site and conditions, safe use of tools and equipment, confirmation of no gas.

1.5 Potential safety hazards and controls are described.

Range hazards may include – live gas, pneumatic release, working in excavations, other utilities, vehicles, general public, ignition source, wind direction;
controls may include – signage, exclusion zone, personal protective equipment, safe access and egress, temporary traffic control, gas detection equipment, emergency services.

1.6 Requirements of the tools and equipment for responding to and locating gas escapes are described.

Range requirements may include – function, intrinsically safe, specification, calibration;
equipment includes – personal protective equipment, bar holing equipment, gas detectors, odourator.

1.7 Leakage classification criteria is described.

Range class one, class two, class three, no trace.

1.8 Potential faults associated with incorrect application and operation of equipment and procedures, and the steps to avoid them are described.

Outcome 2

Respond to and identify a gas escape.

Performance criteria

2.1 Hazards for the specified job are identified and controlled.

2.2 Equipment is prepared.

2.3 Gas leakage detection equipment is used to conduct a non-invasive survey to identify gas escape.

Range non-invasive survey may include checking – gas network assets, ducts, other utility surface boxes, man holes and sumps, building lines, cavities.

2.4 Requirement to escalate gas escape to an elevated response is determined.

Range may include – gas in or under building, gas in ducts, visible gas escape, audible gas escape, high gas reading in atmosphere, above ground gas escapes.

Outcome 3

Carry out a survey to locate and classify a gas escape.

Performance criteria

3.1 Other utilities in the area are identified.

3.2 Percussion bar holes are made along the line of the gas pipeline.

3.3 Gas concentration readings in percussion bar holes are taken, recorded, and monitored.

3.4 Escape is pinpointed and classified.

Range location of leak, source of leak, gas concentration, spread, building proximity.

3.5 Leakage area is secured in accordance with the classification.

3.6 Leakage repair plan is determined, and any immediate action is taken to control the leak.

Range may include – temporary repairs, permanent repairs, isolation, slit trench, sealing ducts, controlled venting, monitoring.

Outcome 4

Complete reporting and documentation.

Performance criteria

4.1 Records and documents are completed and processed, and information is communicated to internal and external parties as required.

Range may include – gas concentrations report, additional work, leak classification, incident report.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 November 1997	31 December 2018
Revision	2	3 August 2000	31 December 2018
Review	3	22 October 2002	31 December 2018
Review	4	20 November 2006	31 December 2020
Review	5	17 August 2017	31 December 2023
Revision	6	30 August 2018	31 December 2023
Review	7	27 May 2021	N/A

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.