

<b>Title</b>	<b>Describe procedures, plan layouts, assemble, place and fire shots for snow control</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe emergency, misfire, and communication procedures for firing shots for snow control; plan layout for shots; assemble and prepare charges; and place and fire shots for snow control.
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<b>Classification</b>	Extractive Industries > Surface Extraction
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	Unit 21152, <i>Demonstrate and apply knowledge of storing explosives for use</i> ; and Unit 17694, <i>Demonstrate knowledge of explosives and their properties</i> ; or demonstrate equivalent knowledge and skills.
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## Guidance Information

- Performance of the outcomes of this unit standard must comply with the following:
  - Health and Safety at Work Act 2015 (HSW);
  - Health and Safety at Work (General Risk and Workplace Management) Regulations 2016;
  - Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016;
  - Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016;
  - Health and Safety at Work (Hazardous Substances) Regulations 2017 and related Safe Work Instruments (SWIs) published by WorkSafe NZ;
  - approved codes of practice issued pursuant to the HSW Act;
  - Hazardous Substances and New Organisms (HSNO) Act 1996;
  - AS 2187.1 - 1998 *Explosives – Storage, transport and use – Storage*;
  - NZS 4403:1976 *Code of practice for the storage, handling and use of explosives (Explosives Code)*;
  - Territorial and/or Local Authority plans and bylaws for the storing of explosives.
- The Environmental Protection Authority (EPA) is responsible for assessing and approving hazardous substances and, where appropriate, setting controls on the way the substances are used. Any questions relating to the provisions for hazardous substances should be directed to [EPA New Zealand](http://www.epa.govt.nz).

- 3 Any new, amended or replacement Acts, regulations, standards, codes of practice, guideline, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 4 **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 manuals, codes of practice, or policy statements.
- 5 Industry guidelines for recording snow and weather are contained in the *NZ Guidelines and Recording Standards for Weather, Snowpack and Avalanche Observations* (Wellington: New Zealand Mountain Safety Council, 2017).

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## Outcomes and performance criteria

### Outcome 1

Describe emergency, misfire, and communication procedures for firing shots for snow control.

#### Performance criteria

- 1.1 Emergency procedures for snow control are described in accordance with company procedures.  
  
Range may include but is not limited to – warning signage, communication systems.
- 1.2 Communication and recording procedures for all stages of assembly, placement, and firing are described in accordance with company procedures.
- 1.3 Procedures for misfires are described in accordance with company procedures.  
  
Range identification, reporting, and recording for isolation, recovery, or disposal.

### Outcome 2

Plan layout for shots for snow control.

#### Performance criteria

- 2.1 Snow pack history and weather history are assessed from accumulated data in relation to the area involved.
- 2.2 Prevailing snow conditions, in particular start zones, are assessed in relation to past knowledge, local conditions and visual information.
- 2.3 Recording and log book procedures are strictly followed in accordance with company procedures.

- 2.4 Place from where shot is to be fired is plotted in relation to known risks, travel routes and post-shot outcomes.
- 2.5 Number and size of charges are determined from accumulated data in accordance with company procedures.
- 2.6 Methods of delivery are described in terms of industry best practice.
- Range lobbing, sliding, suspending, burying.

### Outcome 3

Assemble and prepare charges for snow control.

#### Performance criteria

- 3.1 Materials are assembled in designated areas in accordance with company procedures and licensing requirements.
- 3.2 Safety fuse is tested for burn rate and altitude effect, in accordance with company procedures and manufacturer's instructions.
- 3.3 Fuses and detonators are pre-assembled, labelled and stored in designated areas in accordance with manufacturer's requirements, company procedures, and legislative and licensing requirements.
- 3.4 Charges are primed in accordance with blast plan.
- Range includes but is not limited to – number of charges, size of charges, primed at base or on site, single or double fusing, roping up charge.

### Outcome 4

Place and fire shots for snow control.

#### Performance criteria

- 4.1 Site is secured in accordance with blast plan and company procedures.
- 4.2 Shot placement is determined in accordance with visual observations and pre-determined information.
- 4.3 Method of delivery is determined and personnel and charge are positioned in accordance with safest practice for the site.
- Range may include but is not limited to – lobbing, sliding, suspending, burying.
- 4.4 Charge is initiated, confirmed, and delivered in accordance with determined method of delivery.

<b>Planned review date</b>	31 December 2022
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	25 November 2000	31 December 2012
Review	2	19 April 2002	31 December 2012
Review	3	24 November 2005	31 December 2012
Review	4	18 March 2011	N/A
Rollover and Revision	5	25 January 2018	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0114
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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](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.