

<b>Title</b>	<b>Demonstrate knowledge of the geotechnical requirements for ground stability at surface extraction sites</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>15</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of strength characteristics of soil and rock at surface extraction sites; and analyse the geotechnical requirements of surface extraction sites.
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<b>Classification</b>	Extractive Industries > Surface Extraction
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 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 (Mining Operations and Quarrying Operations) Regulations 2016;  
Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016;  
approved codes of practice issued pursuant to the HSW Act.
- 2 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.
- 3 Definitions  
*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.  
*Industry best practice* may be documented in management plans, control plans, company procedures, managers' rules, occupational health and safety policy, industry guidelines, codes of practice, manufacturers' instructions, and safe working and/or job procedures (or equivalent).

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of strength characteristics of soil and rock at surface extraction sites.

#### Performance criteria

- 1.1 Soil and rock types found at surface extraction sites are described in terms of their strength.
- Range strengths include but are not limited to – compressive, tensile, shear.
- 1.2 Industry best practice test methods for soil and rock compressive, tensile and shear strengths are described.
- 1.3 The angle of repose is described in relation to the soil and rock.
- Range excavated material, material in situ, stockpiles.

### Outcome 2

Analyse the geotechnical requirements of surface extraction sites.

#### Performance criteria

- 2.1 The methods and principles for designing surfaces are explained in terms of the quality and stability of the soil and rock, in accordance with industry best practice.
- Range includes but is not limited to – strength, friction, specific gravity, porosity.
- 2.2 The geotechnical design and location of the area required for stockpiles of specified soil and rock compositions is explained in relation to the space available.
- Range production requirements, angle of repose, stability of stockpile base, traffic, slope.
- 2.3 The methods and reasons for monitoring and maintenance of ground are described in relation to potential hazards, in accordance with industry best practice.

Range monitoring may include but is not limited to – water content, water table, underlying geological structure, spontaneous combustion; hazards may include but are not limited to – slumping, creeping, hanging up, traffic interaction, pedestrians; maintenance may include but is not limited to – dust, contamination, product quality, erosion, capacity limits, stacking, load out.

<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 July 1999	31 December 2017
Review	2	27 January 2005	31 December 2017
Rollover and Revision	3	16 July 2010	31 December 2017
Review	4	18 June 2015	31 December 2019
Review	5		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.