

Title	Analyse Human Factors present in workplace practices at an extractive site		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: demonstrate knowledge of concepts and principles related to Human Factors; analyse workplace practices at an extractive site by examining Human Factors that could contribute to error-producing conditions; and recommend controls that will reduce the likelihood of error-producing conditions resulting from Human Factors in the underlying workplace practice.
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Classification	Extractive Industries > Extractive Industries Management
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Available grade	Achieved
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Guidance Information

- Performance of the outcomes of this unit standard must comply the following:
Crown Minerals Act 1991;
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;
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;
Resource Management Act 1991;
AS/NZS ISO 31000:2009, *Risk management - Principles and guidelines*;
and company procedures.
- 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.
- 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.

Cost effective includes following the 'ALARP' ('as low as reasonably practicable') principle.

Human Factors is a discipline of study that deals with the psychological, social, physical, and biological characteristics of a user and the system the user is in.

Human Factors involves the study of all aspects of the way humans interact with the task and the environment, with the aim of preventing harm and improving operational performance and safety.

Risk Management Processes refer to the systematic application of company policy and procedures to the tasks of identifying, analysing, assessing, treating, and monitoring risk.

SCHELL stands for Software/Culture/Hardware/Environment/Liveware/Liveware.

Workplace practice refers to people practices or systems practices, and/or engineering (design and technology) practices.

- 4 This unit standard is intended for, but is not limited to, workplace assessment.
- 5 Range
Analysis of two workplace practices is required.
- 6 The reference text for this unit standard is Geoff Simpson, Tim Horberry and Jim Joy, *Understanding human error in mine safety* (Farnham, England: Ashgate, 2009).

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of concepts and principles related to Human Factors.

Performance criteria

- 1.1 The interaction of person, task, environment and machine is explained in terms of safe and unsafe acts and conditions.

Range	unsafe acts include but are not limited to – human violations and errors; conditions include but are not limited to – equipment, training, rules, operating procedures, machines, management.
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- 1.2 The predisposing factors for unsafe acts and unsafe conditions are explained in terms of recognised models.

Range	evidence is required of three models.
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- 1.3 Models of human factors are explained in terms of the advantages of a systems model.

Range	models include – people models, systems models; systems models include – SCHELL, Swiss Cheese.
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- 1.4 Classifications of non-compliance and human error are explained in terms of their application at an extractive site.

Range classifications may include but are not limited to – Rasmussen, Reason, errors and omissions, information processing.

Outcome 2

Analyse workplace practices at an extractive site by examining Human Factors that could contribute to error-producing conditions.

Performance criteria

- 2.1 Workplace practices are described in terms of how the interaction of person, task, environment, and machine could contribute to safe and unsafe acts and conditions.

Range unsafe acts include but are not limited to – human violations and errors;
conditions include but are not limited to – equipment, training, rules, operating procedures, machines, management.

- 2.2 The predisposing factors for unsafe acts and unsafe conditions present in the workplace practices are explained

- 2.3 The workplace practices are analysed in terms of models of Human Factors.

Range models include – people models, systems models;
systems models may include but are not limited to – SCHELL, Swiss Cheese.

- 2.4 The potential human errors present in the workplace practices are analysed in terms of recognised classifications.

Range classifications may include but are not limited to – Rasmussen, Reason, errors and omissions, information processing.

Outcome 3

Recommend controls that will reduce the likelihood of error-producing conditions resulting from Human Factors in the underlying workplace practice.

Performance criteria

- 3.1 Possible controls are identified in accordance with the results of the analysis of Human Factors within the workplace practices.

Range controls may include but are not limited to – defences, barriers, operating procedures.

- 3.2 Practical and cost effective controls are recommended within the requirements of the extractive site, and in accordance with company procedures and relevant legislation.

Planned review date	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	9 December 2010	31 December 2017
Review	2	18 June 2015	N/A
Rollover and Revision	3	25 January 2018	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.