



# New Zealand Gazette

OF THURSDAY, 11 SEPTEMBER 2008

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WELLINGTON: FRIDAY, 12 SEPTEMBER 2008 — ISSUE NO. 139

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## DEPARTMENT OF LABOUR

### REQUIREMENTS OF HOLDERS OF CERTIFICATES OF COMPETENCE

PURSUANT TO REGULATION 20 OF THE  
HEALTH AND SAFETY IN EMPLOYMENT  
(MINING ADMINISTRATION) REGULATIONS 1996

**Notice of the requirements of holders of Certificates of Competence under the Health and Safety in Employment (Mining Administration) Regulations 1996**

Pursuant to Regulation 20 of the Health and Safety in Employment (Mining Administration) Regulations 1996, I, Christopher Blake, Secretary of Labour, hereby give notice of the qualifications and experience required to hold a certificate of competence listed in Regulation 16 of the Health and Safety in Employment (Mining Administration) Regulations 1996.

***Interpretation***

In this notice reference to:

**the secretary** means the Secretary of Labour

**the regulations** means the Health and Safety in Employment (Mining Administration) Regulations 1996

**unit standard** means a unit standard registered on the National Qualifications Framework established under section 253(1)(c) of the Education Act 1989.

***Commencement and revocation***

- (1) This notice has effect from 1 October 2008.
- (2) The notice published in the *New Zealand Gazette*, 27 January 2005, No. 30, page 723, relating to certificates of competence under the regulations is revoked as from 1 October 2008.

***Certificate of competence as a first-class mine manager***

- (1) The holder of a certificate of competence as a first-class mine manager must have the qualifications and experience set out in paragraph (2) and one of paragraphs (3), (4), or (5), as applicable.
- (2) The holder must have passed:
  - (a) the unit standards set out in Group A and Group 10 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) If the holder has held a certificate of competence as a first-class coal mine manager under the Coal Mines Act 1979 or regulations made under the Health and Safety in Employment Act 1992, the holder must satisfy the secretary that he or she has been employed in the underground workings of a mine or of an approved tunnel for a period or periods totalling not less than 1 year, of which not more than 6 months was in an approved tunnel.
- (4) If the holder has a degree in Mineral Technology (Mining) conferred by the University of Otago or holds a degree or diploma in mining engineering conferred by any other university or school of mines, the holder must satisfy the secretary that:
  - (a) he or she has been employed in the underground workings of a mine or approved tunnel for not less than 3 years (including any periods served in the course of study); and
  - (b) at least 1 year of the employment described in subparagraph (a) was at the face of a mine or approved tunnel; and
  - (c) no more than 6 months of the work experience referred to in subparagraph (b) was in an approved tunnel.
- (5) In cases to which paragraphs (3) or (4) do not apply, the holder must satisfy the secretary that he or she has not less than 3 years' work experience at the face of a mine or approved tunnel, of which not more than 6 months was in an approved tunnel.
- (6) In paragraphs (3) to (5), "approved tunnel" means a tunnel whose workings are, in the opinion of the secretary, similar to the workings of a mine.

***Certificate of competence as a first-class coal mine manager***

- (1) The holder of a certificate of competence as a first-class coal mine manager must have the qualifications and experience set out in paragraphs (2) and (6), and one of paragraphs (3), (4), or (5), as applicable.
- (2) The holder must have passed:
  - (a) the unit standards set out in Groups B and D and in Groups 3, 4, 5 and 6 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) If the holder has held a certificate of competence as a first-class mine manager under the Mining Act 1971 or regulations made under the Health and Safety in Employment Act 1992, he or she must satisfy the secretary that he or she has been employed in the underground workings of a coal mine or of an approved tunnel, for a period or periods totalling not less than 1 year, of which not more than 6 months was in an approved tunnel.
- (4) If the holder has a degree in Mineral Technology (Mining) conferred by the University of Otago, or is the holder of a degree or diploma in mining engineering conferred by any other university or school of mines, he or she must satisfy the secretary that:
  - (a) he or she has been employed in the underground workings of a coal mine or of an approved tunnel, for a period or periods totalling not less than 3 years (including any periods served in the course of study); and
  - (b) at least 1 year of the work experience referred to in subparagraph (a) was at the face of a coal mine, or approved tunnel; and
  - (c) no more than 6 months of the work experience referred to in subparagraph (b) was in an approved tunnel.
- (5) In cases to which paragraph (3) or (4) does not apply, the holder must satisfy the secretary that:
  - (a) he or she has been employed in the underground workings of a coal mine or of an approved tunnel for a period or periods totalling not less than 5 years; and
  - (b) at least 1 year of the work experience described in subparagraph (a) was at the face of a coal mine or approved tunnel; and
  - (c) no more than 6 months of the work experience described in subparagraph (b) was in an approved tunnel.
- (6) Every holder of a certificate of competence as a first-class coal mine manager must hold a current certificate of competence as a gas tester issued under the regulations.
- (7) In paragraphs (3) to (5), “approved tunnel” means a tunnel whose workings are, in the opinion of the secretary, similar to the workings of a coal mine.

***Certificate of competence as an A-grade opencast coal mine manager***

- (1) The holder of a certificate of competence as an A-grade opencast mine manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Groups 1 and 2 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that –
  - (a) he or she has had, in the aggregate, at least 2 years’ work experience in the workings of an opencast coal mine; or
  - (b) he or she has had, in the aggregate, at least 12 months’ work experience in the workings of an opencast coal mine, and at least two years’ work experience in the underground workings of a mine, coal mine, or tunnel; or

- (c) he or she:
  - (i) is currently the holder of a certificate of competence as a first-class mine manager; and
  - (ii) has had at least 12 months' work experience in an opencast coal mine.

***Certificate of competence as a B-grade opencast coal mine manager***

- (1) The holder of a certificate of competence as a B-grade opencast coal mine manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Group 1 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that –
  - (a) he or she has had, in the aggregate, at least 2 years' work experience in the workings of an opencast coal mine; or
  - (b) he or she has had, in the aggregate, at least 12 months' work experience in the workings of an opencast coal mine, and at least 2 years' work experience in the underground workings of a mine, coal mine, or tunnel; or
  - (c) he or she:
    - (i) is currently the holder of a certificate of competence as a first-class mine manager; and
    - (ii) has had at least 12 months' work experience in an opencast coal mine.

***Certificate of competence as an A-grade quarry manager***

- (1) The holder of a certificate of competence as an A-Grade quarry manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Groups 1 and 2 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that –
  - (a) he or she has had, in the aggregate, at least 2 years' work experience in the workings of an opencast mine or quarry; or
  - (b) he or she has had, in the aggregate, at least 12 months' work experience in the workings of an opencast mine or quarry, and at least 2 years' work experience in the underground workings of a mine, coal mine, or tunnel; or
  - (d) he or she:
    - (i) is currently the holder of a certificate of competence as a first-class mine manager; and
    - (ii) has had at least 12 months' work experience in an opencast mine or quarry.

***Certificate of competence as a B-grade quarry manager***

- (1) The holder of a certificate of competence as a B-grade quarry manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Group 1 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that –

- (a) he or she has had, in the aggregate, at least 2 years' work experience in the workings of an opencast mine or quarry; or
- (b) he or she has had, in the aggregate, at least 12 months' work experience in the workings of an opencast mine or quarry and at least 2 years' work experience in the underground workings of a mine, coal mine, or tunnel; or
- (c) he or she:
  - (i) is currently the holder of a certificate of competence as a first-class mine manager; and
  - (ii) has had at least 12 months' work experience in an opencast mine or quarry.

***Certificate of competence A-grade tunnel manager***

- (1) The holder of a certificate of competence as an A-grade tunnel manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Group C and in Groups 7, 8 and 9 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that –
  - (a) he or she has had, in the aggregate, at least 2 years' work experience in the workings of a tunnel; or
  - (b) he or she has had, in the aggregate, at least 12 months' work experience in the workings of a tunnel, and at least 2 years' work experience in the underground workings of a mine or coal mine; or
  - (c) he or she:
    - (i) is currently the holder of a certificate of competence as a first-class mine manager; and
    - (ii) has had at least 12 months' work experience in a tunnel.

***Certificate of competence as a B-grade tunnel manager***

- (1) The holder of a certificate of competence as a B-grade tunnel manager must have the qualifications and experience set out in paragraphs (2) and (3).
- (2) The holder must have passed:
  - (a) the unit standards set out in Group C and in Group 7 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that:
  - (a) he or she has had, in the aggregate, at least 2 years' work experience in the workings of a tunnel; or
  - (b) he or she has had, in the aggregate, at least 12 months' work experience in the workings of a tunnel, and at least 2 years' work experience in the underground workings of a mine or coal mine; or
  - (c) he or she:
    - (i) is the holder of a certificate of competence as a first-class mine manager; and
    - (ii) has had at least 12 months' work experience in a tunnel.

***Certificate of competence as a coal mine deputy***

- (1) The holder of a certificate of competence as a coal mine deputy must have the qualifications and experience set out in paragraphs (2), (5) and (6), and one of paragraphs (3) or (4), as applicable.

- (2) The holder must have passed:
  - (a) the unit standards set out in Group D and in Groups 3 and 4 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that he or she has had at least 1 year's work experience actively engaged in the winning of coal and support of the face openings, if the holder is the holder of a certificate of competence as a first-class mine manager or a certificate of competence as an A-grade tunnel manager.
- (4) In cases where paragraph (3) does not apply, the holder must satisfy the secretary that he or she has had at least 5 years' work experience in the underground workings of a coal mine or of a metalliferous mine or in tunnel construction, including:
  - (a) 2 years' work experience actively engaged in the winning of coal and support of the face openings; and
  - (b) 1 year's work experience in some or all of the shift work referred to in paragraph (7).
- (5) The holder must hold a first-aid certificate that:
  - (a) shows that he or she is qualified to give first-aid to persons requiring it; and
  - (b) has been obtained by the holder within the 5 years immediately preceding the date of application for the coal mine deputy's certificate.
- (6) The holder must hold a current certificate of competence as a gas tester issued under the regulations.
- (7) The shift work to which paragraph (4)(b) applies is:
  - (a) preparing for and installing either mechanical or hydraulic transport of coal;
  - (b) building permanent or temporary stoppings;
  - (c) ventilation and erection of brattice;
  - (d) erection of either steel or timber sets;
  - (e) erection of other types of roof supports.

***Certificate of competence as a coal mine underviewer***

- (1) The holder of a certificate of competence as a coal mine underviewer must have the qualifications and experience set out in paragraphs (2), (5) and (6), and one of paragraphs (3) or (4), as applicable.
- (2) The holder must have passed:
  - (a) the unit standards set out in Group D and in Groups 3, 4 and 5 of the Appendix; and
  - (b) if the holder works in an operation where explosives are used, the unit standards set out in Group 13 of the Appendix.
- (3) The holder must satisfy the secretary that he or she has had at least 1 year's work experience actively engaged in the winning of coal and support of the face openings, if the holder is the holder of a certificate of competence as a first-class mine manager or a certificate of competence as an A-grade tunnel manager.
- (4) In cases where paragraph (3) does not apply, the holder must satisfy the secretary that he or she has had at least 5 years' work experience in the underground workings of a coal mine or of a metalliferous mine or in tunnel construction, including:
  - (a) 2 years' work experience actively engaged in the winning of coal and support of the face openings; and
  - (b) 1 year's work experience in some or all of the shift work referred to in paragraph (7).
- (5) The holder must hold a first-aid certificate that:
  - (a) shows that he or she is qualified to give first-aid to persons requiring it; and
  - (b) has been obtained by the applicant within the 5 years immediately preceding the date of application for the certificate of competence as a coal mine underviewer.

- (6) The holder must hold a current certificate of competence as a gas tester issued under the regulations.
- (7) The shift work to which paragraph (4)(b) applies is:
  - (a) preparing for and installing either mechanical or hydraulic transport of coal;
  - (b) building permanent or temporary stoppings;
  - (c) ventilation and erection of brattice;
  - (d) erection of either steel or timber sets;
  - (e) erection of other types of roof supports.

***Certificate of competence as a gas tester***

- (1) The holder of a certificate of competence as a gas tester must have passed the unit standards set out in Group 12 of the Appendix.
- (2) The holder of a certificate of competence as a gas tester must satisfy the secretary that:
  - (a) he or she is the holder of a current first aid certificate; and
  - (b) he or she has had at least 3 months' work experience in testing for gas.

***Certificate of competence as a mine surveyor***

- (1) The holder of a certificate of competence as a mine surveyor must have been trained to the satisfaction of the secretary as a mine surveyor by:
  - (a) a person who is a registered surveyor under the Surveyors Act 1966; or
  - (c) a person who has a certificate of competency as a mine surveyor.
- (2) Periodic reports on training to which paragraph (1) applies must have been supplied to the secretary.
- (3) The holder of a certificate of competence as a mine surveyor must have had at least 3 years' practical experience in surveying including:
  - (a) 6 months' work experience in opencast and topographical surveying; and
  - (b) 6 months' work experience in engineering surveying; and
  - (c) 6 months' work experience underground in the surveying of mines, and
  - (d) 3 months' work experience in boundary definition work comprising field and office work.

***Certificate of competence as a winding engine driver***

- (1) The holder a certificate of competence as a winding engine driver must have passed the unit standards set out in Group 11 of the Appendix.
- (2) The applicant for a certificate of competence as a winding engine driver must demonstrate to the satisfaction of the secretary that:
  - (a) he or she has the ability to operate a winder and respond to standard industry signals:  
and
  - (b) he or she has knowledge of, and the appropriate skill to respond to, emergency procedures.

***Recognition of Overseas Certificates or Work Experience***

- (1) The secretary may grant any of the certificates of competence listed in regulation 16 of the regulations, other than a certificate of competence as a gas tester or a certificate of competence as a winding engine driver, without assessment to any person, if the secretary is satisfied that:
  - (a) the applicant is to reside in New Zealand, either permanently or temporarily; and
  - (b) the applicant is the holder of:

- (i) a certificate of a corresponding class granted outside New Zealand, if the standard of training and assessment required for the grant of the overseas certificate is equivalent to that required for the grant of a certificate under regulations made under the Health and Safety in Employment Act 1992; or
- (ii) credentials that clearly demonstrate his or her mining experience outside New Zealand and his or her ability to carry out the duties of the position to which the certificate pertains; and
- (c) the applicant has provided a letter from their present employer, or immediate previous employer if not currently employed, that they are of good character and repute; and
- (d) the applicant is able to speak, write and understand the English language to a standard sufficient for the purpose of carrying out the duties to which the certificate of competence relates.

***Further Information***

Information regarding this notice can be obtained from the Group Manager:Workplace Services, P.O. Box 3705, Wellington.

Dated at Wellington this 10th day of August 2008.

Christopher Blake, Secretary of Labour.

## Appendix

### **Amendments to the experience and qualifications required by applicants for a Certificate of Competence under the HSE (Mining Administration) Regulations 1996**

*The full list of the experience and qualifications required by applicants for a Certificate of Competence under the Health and Safety in Employment (Mining Administration) Regulations 1996, will now be as follows:*

#### **Surface Extraction Certificates of Competence**

B Grade Quarry Manager and B Grade Opencast Coal Mine Manager

Complete Group 1 plus, where explosives are used, Group 13

A Grade Quarry Manager and A Grade Opencast Coal Mine Manager

Complete Groups 1 and 2 plus, where explosives are used, Group 13

#### **Underground Coal Certificates of Competence**

Coal Mine Deputy

Complete Group D and Groups 3 and 4 plus, where explosives are used, Group 13

Coal Mine Underviewer

Complete Group D and Groups 3, 4 and 5 plus, where explosives are used, Group 13

First Class Coal Mine Manager

Complete Group B and D and Groups 3, 4, 5 and 6 plus, where explosives are used, Group 13

#### **Tunnels Certificates of Competence**

B Grade Tunnel Manager

Complete Group C and Group 7 plus, where explosives are used, Group 13

A Grade Tunnel Manager

Complete Group C and Groups 7, 8 and 9 plus, where explosives are used, Group 13

#### **Underground Metalliferous Certificates of Competence**

First Class Mine Manager

Complete Group A and Group 10 plus, where explosives are used, Group 13

#### **Winding Engine Driver Certificate of Competence**

Winding Engine Driver

Complete Group 11

#### **Gastester Certificate of Competence**

Gastester

Complete Group 12

#### **Replacement Unit Standards**

*Unit standards listed are current at the time of gazetting. Any unit standard listed that subsequently expires and is replaced with a new unit standard number, as verified with NZQA, can be completed in place of the expired unit to meet that COC's requirements.*

#### **Exemption from Unit Standards**

*A person may be eligible for exemption from a replacement unit standard, where the expired unit standard it replaced has been listed in the previous gazette notice, and has been previously achieved in their record of learning.*

*For a certificate of competence as a first-class mine manager***Group A**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7146	Demonstrate knowledge and ability to work in an underground mine	2	6
8905	Construct and maintain access roads within surface extraction sites	3	3
8909	Maintain working surfaces at surface extraction sites	2	2
8922	Conduct safety checks prior to equipment usage at an extractive site	2	2
15664	Demonstrate knowledge of the geological nature of surface extraction sites	3	5
15672	Demonstrate knowledge of mines rescue service	2	2
21153	Demonstrate knowledge of dewatering, pump maintenance, cleaning settling ponds at extraction sites	3	12
21155	Review consent conditions and demonstrate knowledge of the use of water at surface extraction sites	3	10

*For a certificate of competence as a first-class coal mine manager***Group B**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
8905	Construct and maintain access roads within surface extraction sites	3	3
8909	Maintain working surfaces at surface extraction sites	2	2

*For a certificate of competence as an B-grade tunnel manager***Group C**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
2401	Shut down and isolate machines and equipment	3	3
3271	Suppress fire with hand extinguishers and fixed hose reels	2	1
7146	Demonstrate knowledge and ability to work in an underground mine	2	6
8922	Conduct safety checks prior to equipment usage at an extractive site	2	2
15672	Demonstrate knowledge of Mines Rescue Service	2	2
21821	Supply, maintain, deliver, and store services for an underground mine	3	15

*For a certificate of competence as a coal mine deputy***Group D**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
2401	Shut down and isolate machines and equipment	3	3
3271	Suppress fire with hand extinguishers and fixed hose reels	2	1
7146	Demonstrate knowledge and ability to work in an underground mine	2	6
8922	Conduct safety checks prior to equipment usage at an extractive site	2	2
15672	Demonstrate knowledge of Mines Rescue Service	2	2
21821	Supply, maintain, deliver, and store services for an underground mine	3	15

**Groups 1 and 2: Surface Extraction****GROUP 1**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7142	Demonstrate knowledge of regulatory requirements to manage an extractive site	6	25
8902	Prepare and implement plans for quarry face and benching operations	4	4
8905	Construct and maintain access roads within quarries and aggregate production sites	3	3
8909	Maintain working surfaces at surface extraction sites	2	2
8922	Conduct safety checks prior to equipment usage at an extractive site	2	2
21153	Demonstrate knowledge of dewatering, pump maintenance, cleaning settling ponds at extraction sites	3	12
21154	Demonstrate knowledge of procedures to minimise environmental impact at an extraction site	5	7
21155	Review consent conditions and demonstrate knowledge of the use of water at surface extraction sites	3	10
21156	Plan, implement, and describe surface extraction production to minimise environmental impacts	5	15

**GROUP 2**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7143	Inspect and report on extractive site and operations	5	10
7144	Review and implement plans for ongoing operations of an extractive site	5	15
8899	Plan storage for product processed at extractive sites	4	8
15658	Select excavation and transportation plant for surface extraction	4	8
15663	Design and maintain sloping surfaces in surface excavation and stockpiles	6	20
15664	Demonstrate knowledge of the geological nature of surface extraction sites	3	5
15667	Demonstrate knowledge of surface extraction methods	5	10
21151	Demonstrate knowledge of planning rehabilitation operations of an extractive site	6	15
21157	Demonstrate knowledge of and select crushing and screening plant for extractive industries	4	7

**Groups 3 to 6: Underground Coal****GROUP 3**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7142	Demonstrate knowledge of regulatory requirements to manage an extractive site	6	25
7143	Inspect and report on extractive site and operations	5	10
21278	Describe, install, and reassess support systems for an underground mine	4	15

**GROUP 4**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7144	Review and implement plans for ongoing operations of extractive site	5	15
8899	Plan storage for product processed at extractive sites	4	8
16686	Conduct an incident investigation at an extraction site	5	8
17691	Use mathematics to solve problems in an extractive industries workplace	4	15
17705	Develop and maintain basic ventilation systems in underground mines and tunnels	4	15
21661	Demonstrate knowledge of the use of electrical reticulation plant and equipment in underground mines	4	10
21662	Demonstrate knowledge of development and extraction plant and methods for underground coal mining	4	15
21281	Interpret and test for gases in an underground extraction site	4	15
22057	Demonstrate knowledge of fluid power systems used in underground mines and tunnels	4	10

**GROUP 5**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7145	Design, establish and maintain effective ventilation systems in underground mines	5	20
15666	Demonstrate knowledge of the geology of underground extraction	4	10
17743	Demonstrate knowledge of surveying tools and principles applicable to an extractive site	4	4
17744	Read and interpret an underground extractive site plan	4	5
21151	Demonstrate knowledge of planning rehabilitation operations of an extractive site	6	15
21153	Demonstrate knowledge of dewatering, pump maintenance, cleaning settling ponds at extraction sites	3	12
21629	Evaluate and implement plans to manage old workings and inundations in underground sites	5	10
21823	Analyse and select mining and transportation plant for underground coalmines	6	15

**GROUP 6**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
8902	Prepare and implement plans for quarry face and benching operations	4	4
15658	Select excavation and transportation plant for surface extraction	4	8
15662	Investigate and design a roof support system for underground mines and tunnels	6	20
15663	Design and maintain sloping surfaces in surface excavations and stockpiles	6	20
15665	Demonstrate knowledge of the geology of surface extraction	4	5
15667	Demonstrate knowledge of surface extraction methods	5	10
15668	Demonstrate knowledge of extraction methods for underground coal	6	20
17693	Demonstrate knowledge of water properties in extractive sites	6	20
21154	Demonstrate knowledge of procedures to minimise environmental impact at an extraction site	5	7
21156	Plan, implement, and describe surface extraction production to minimise environmental impacts	5	15
21157	Demonstrate knowledge of and select crushing and screening plant for extractive industries	4	7
21280	Demonstrate knowledge of and design an effective ventilation system in an underground mine	6	20
22056	Demonstrate knowledge of theoretical mechanics for extractive industries	5	20

**Groups 7 to 9: Tunnels****GROUP 7**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7142	Demonstrate knowledge of regulatory requirements to manage an extractive site	6	25
7143	Inspect and report on extractive site and operations	5	10
7144	Review and implement plans for ongoing operations of extractive site	5	15
8899	Plan storage for product processed at extractive sites	4	8
16686	Conduct an incident investigation at an extraction site	5	8
17705	Develop and maintain basic ventilation systems in underground mines and tunnels	4	15
21278	Describe, install, and reassess support systems for an underground mine	4	15
21281	Interpret and test for gases in an underground extraction site	4	15

**GROUP 8**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
15660	Select excavation and transportation plant for tunnels and underground metalliferous mines	6	15
15666	Demonstrate knowledge of the geology of underground extraction	4	10
15669	Demonstrate knowledge of extraction methods for tunnels	5	15

**GROUP 9**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
15662	Investigate and design a roof support system for underground mines and tunnels	6	20
17691	Use mathematics to solve problems in an extractive industries workplace	4	15
21151	Demonstrate knowledge of planning rehabilitation operations of an extractive site	6	15

**Plus ONE of the following:**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7145	Design, establish and maintain effective ventilation systems in underground mines	5	20

**OR**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
21280	Demonstrate knowledge of and design an effective ventilation system in an underground mine	6	20

**Group 10: Underground Metalliferous****GROUP 10**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7142	Demonstrate knowledge of regulatory requirements to manage an extractive site	6	25
7143	Inspect and report on extractive site and operations	5	10
7144	Review and implement plans for ongoing operations of extractive site	5	15
7145	Design, establish and maintain effective ventilation systems in underground mines	5	20
8899	Plan storage for product processed at extractive sites	4	8
8902	Prepare and implement plans for quarry face and benching operations	4	4
15658	Select excavation and transportation plant for surface extraction	4	8
15662	Investigate and design a roof support system for underground mines and tunnels	6	20
15663	Design and maintain sloping surfaces in surface excavations and stockpiles	6	20
15665	Demonstrate knowledge of the geology of surface extraction	4	5
15666	Demonstrate knowledge of the geology of underground extraction	4	10
15667	Demonstrate knowledge of surface extraction methods	5	10
15670	Demonstrate knowledge of extraction methods for metalliferous mines	6	20
16686	Conduct an incident investigation at an extraction site	5	8
17693	Demonstrate knowledge of water properties in extractive sites	6	20
17744	Read and interpret an underground extractive site plan	4	5
21151	Demonstrate knowledge of planning rehabilitation operations of an extractive site	6	15
21154	Demonstrate knowledge of procedures to minimise environmental impact at an extraction site	5	7
21156	Plan, implement, and describe surface extraction production to minimise environmental impacts	5	15
21157	Demonstrate knowledge of and select crushing and screening plant for extractive industries	4	7
21278	Describe, install, and reassess support systems for an underground mine	4	15
21280	Demonstrate knowledge of and design an effective ventilation system in an underground mine	6	20
21281	Interpret and test for gases in an underground extraction site	4	15
21629	Evaluate and implement plans to manage old workings and inundations in underground sites	5	10
22056	Demonstrate knowledge of theoretical mechanics for extractive industries	5	20

**Group 11: Winding Engines****GROUP 11**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
7164	Operate a manually controlled winding engine in an underground mine	4	6

**Group 12: Gas testing****GROUP 12**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
21281	Interpret and test for gases in an underground extraction site	4	15

**Group 13: Managers (where explosives are used)****GROUP 13**

<i>Unit No.</i>	<i>Title</i>	<i>Level</i>	<i>Credits</i>
17694	Demonstrate knowledge of explosives and their properties	2	2
21152	Demonstrate knowledge of storing explosives for use in extractive industries	4	10