

Model Work Health and Safety Code of Practice for Mining - Public Comment Response Form

Individual/Organisational name: NEWCREST MINING LIMITED

Codes of Practice

GENERAL COMMENTS

- This submission should be read in conjunction with the submission made by Newcrest Mining Limited in relation to the proposed Chapter 9 of the Model Work Health and Safety Regulations.
- The introductory sections in the Codes relating to "How to use this Code of Practice" should be reviewed and revised to be consistent across Codes.

Roads and Other Vehicle Operating Areas

Section/(page number)	Comment
1.2 (5)	The reference to hazard management plan should be replaced with "principal mining hazard management plan" to be consistent with the Regulation.
3 (7)	<p>The first sentence should read "Regulation 9.2.11 of the WHS Regulations requires that when conducting a risk assessment <u>for the purposes of preparing a principal mining hazard management plan</u>, the mine operator..." (underlining added).</p> <p>This amendment reflects the requirements of the proposed Regulation under 9.2.11 and is consistent with other Codes (eg see page 12 of the Code for Inundation and Inrush Hazard Management).</p>
4.1 (9)	The second sentence is missing a word and should read, "The use of these materials may lead <u>to</u> an increased...".

5 (16)	<p>Proposed Regulation 9.2.4 requires that a review of control measures must be undertaken in prescribed circumstances not "whenever there are any changes associated with the road or other vehicle operating areas". This paragraph should be amended to properly reflect the legal requirement set out in proposed Regulation 9.2.4.</p> <p>It does not appear to be a legislative requirement that health and safety representatives "must be" consulted in undertaking a review of control measures. Accordingly, the reference to "must" should be changed to "should".</p>
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The Mine Records

Section/(page number)	Comment
1.1 (4)	The reference to a mine record consisting of "each report by a shift supervisor at a mine" is inaccurate and potentially includes any report by a shift supervisor which is a more onerous obligation than that which is imposed by the proposed Regulation. The Code should be amended to read "each report under Regulation 9.2.13 by a shift supervisor at a mine".
1.5 (4)	There does not appear to be a general requirement under the proposed Regulation for a mine record to be available on request to a worker or that "all workers at the mine must have access to the information in the mine record". Accordingly, the third bullet point and paragraph immediately below the bullet points should have the legal requirement identified or be removed.

WHS Management Systems in Mining

Section/(page number)	Comment
Scope and Application (3)	<p>The Code provides that, "You should use this Code if you are a person conducting a business or undertaking (PCBU) and have management or control of the workplace. This person is usually the mine holder or mine operator". This statement does not reflect the legal position under Chapter 9 of the proposed Regulation.</p> <p>The obligations under Chapter 9 of the proposed Regulation in relation to a Work Health and Safety Management System (WHSMS) are imposed on the mine operator only. Accordingly, the Code should provide that the Code <u>should</u> be used by the "mine operator" and can provide guidance and information for other PCBUs or persons who have management or control of the workplace.</p>
1.1 (5)	<p>The reference to an "effective" WHSMS in the first bullet point does not reflect the requirements placed on a mine operator under the proposed Regulations. It also leads to confusion as to what an "effective" WHSMS is. The word "effective" should be removed.</p> <p>The reference to "prepare management control plans" for any principal mining hazard in the third bullet point should be amended to read "prepare principal mining hazard management plans" so that the language is consistent with the language used under the proposed Regulation.</p>

	<p>In relation to the fourth bullet point, there may be instances where it is not appropriate for the emergency plan to be used. The proposed regulation recognises that as it provides that "the mine operator must use the emergency plan as the primary means of emergency response at a mine" (see 9.2.32(2)). The fourth dot point should be amended to read, "prepare an emergency plan and use the emergency plan as the primary means of emergency response when responding to an emergency".</p>
1.1 (6)	<p>The reference to "implement a safety role for workers" should be replaced with "consult with workers at the mine (Regulation 9.4.2)" (see Newcrest's submission in relation to the proposed Regulations).</p> <p>The reference to "Identify the hazards (Regulation 9.2.2)" should be a reference to Regulation 9.2.1.</p> <p>The definition of "Principal Mining Hazards" is misleading and does not reflect the definition contained in Regulation 9.1.4. The reference should be amended to read, ..."could create a risk of multiple fatalities in a single incident or fatalities in a series of recurring incidents, in relation to...". For accuracy, an additional bullet point should also be included in the list as follows, "any hazard identified by the mine operator under Regulation 9.2.1".</p>
2.2 (7)	<p>The definition of "principal mining hazard" is inaccurate and should properly reflect the definition contained in Regulation 9.1.4 as it is otherwise misleading. There is also no reference to matters identified by a mine operator having the potential to be a principal mining hazard (see Regulation 9.1.4(b)).</p>
2.3 (8)	<p>Point 3 is confusing and should be re-drafted for clarity. For example, is it intended to refer to operation, shutdown and isolation of machinery? If so, this should be specified.</p> <p>Point 6 requires redrafting for clarity. Further, the reference to "Emergency response plan" should be "Emergency Plan" to be consistent with the proposed Regulation.</p>
3.2 (12)	<p>The description of s48 of the WHS Act should be amended to accurately reflect the wording of the WHS Act. For example, the obligation to consult under s48 is an obligation to consult with workers who carry out work for the business and undertaking as well as with workers who are likely to be directly affected by a matter relating to work health or safety.</p> <p>The reference to "workers being involved in" is misleading and should be replaced with "consultation should occur with workers in relation to the following health and safety matters".</p> <p>The last bullet point which provides that workers should be involved in "the standard of information and training provided to workers" is inaccurate and does not reflect the obligation under s49 of the WHS Act. It should read, "the procedures for providing information and training for workers" which is consistent with s49(f) of the WHS Act.</p> <p>The Code provides that the WHS Regulation contains "specific duties in particular to develop a safety role for workers so they are involved in..." and then lists a series of matters in relation to which they should be involved. This statement is inaccurate and does not properly reflect the requirements under the proposed Regulation or the WHS Act. The proposed Regulation provides that a "safety role" for workers at the mine must be implemented that enables the workers to contribute to identification of principal mining hazards and consideration of the risk control measures for the risks associated with the principal mining hazards.</p>

	Separately, consultation with workers under s49(f) of the WHS Act must occur in a series of prescribed instances which are listed in the proposed Regulation 9.4.2. This section should be re-drafted to properly reflect the requirements imposed under the WHS Act and proposed Regulation.
3.3 (12)	A WHS policy does not usually include detail on the "measurable targets" for improving work health and safety. A WHS policy more traditionally sets out a company's commitment to health and safety and the objectives it wishes to achieve. Detailed information in relation to the "measurable targets" is more appropriately included in procedures for assessing the effectiveness of the WHS Management System.
3.5 (13)	The Code provides that "processes selected [for managing hazards] must be able to deliver the work health and safety targets defined by the policy". Newcrest refers to its comments in relation to the Work health and safety policy. Further, the word "must" should be qualified by, so far as is reasonably practicable".
3.5 (14)	The last paragraph provides that "[a]ll hazard management processes should include input from those doing the work or others who could be exposed to the risks if there is an incident". This is unachievable and should instead reflect the requirements under the WHS Act and Regulation to consult.
4.1 (15)	<p>This section is inaccurate and misleading. The "representative" of the mine operator will not automatically become an "officer" under the WHS Act. Further it is not clear who constitutes a "representative" of the mine operator.</p> <p>A person will only be an "officer" under s27 of the WHS Act if the person falls within the definition of "officer" set out in section 9 of the <i>Corporations Act 2001</i> (Cth). This section should be amended to reflect the correct legal position.</p>
4.2 (16)	<p>For consistency and clarity the descriptions in Figure 3 should reflect the wording used in the proposed Regulation. For example, the reference to "Emergency Response Plan element" should be "Emergency Plan element" and "Health and Safety Management System" should be the "WHS Management System."</p> <p>The description of a "principal mining hazard" does not accurately reflect the definition contained in the proposed Regulation and is potentially misleading.</p>
4.2 (19)	In the third paragraph there is a reference to a requirement for the mining operator to review risk control measures. This statement should be clarified to read that in certain prescribed circumstances the mine operator must review and as necessary revise control measures (see proposed Regulation 9.2.4).
4.3 (20)	The reference to "Emergency response plan" in the heading should be amended to read "Emergency plan" to be consistent with the terminology of the Regulation.
4.5 (22)	The reference to a high potential incident being "not necessarily reportable" is confusing. The Code should clearly state that a high potential incident must be notified to the regulator.
5.3 (23)	The Regulation requires that risk control measures must be reviewed, and as necessary revised in a set of prescribed circumstances (see proposed Regulation 9.2.4). The Code refers to this set of prescribed circumstances as requiring a <u>review of the WHSMS</u> rather than a review of the control measures. This is inaccurate. For example, if there is a notifiable incident, the mine operator is required to review the risk control measures (under Regulation 9.2.4). This review will not necessarily result in a revision of the control measures. In circumstances where the control measures are not revised, the WHSMS does not need to be reviewed in accordance with Regulation 9.2.8 (2). This section should be amended for accuracy.

Inundation and Inrush Hazard Management	
Section/(page number)	Comment
1.1 (5)	Paragraph 2 should be amended to read: "..An inundation or inrush hazard involves includes the.."
1.1 (5)	The last dot point in the second paragraph should be amended to read .."unstable open pit or slope."
1 (5)	The reference to 50m is considered too prescriptive and may not be appropriate for some situation, such as caving mining methods where connection is possible between the cave subsidence zone and a potential inrush source eg a drained open pit that could later collect meteoric water.
1.2 (5)	<p>The reference to hazard management plans should be replaced with "principal mining hazard management plan" to be consistent with the proposed Regulation.</p> <p>Paragraph 3 provides that the "hazard management plan <u>must</u> always implement the best available knowledge". This is inconsistent with the approach under the WHS Act in relation to what is "reasonably practicable". In considering what is reasonably practicable, regard must be had to what the person knows, or ought reasonably to know about the hazard or risk and the ways of eliminating or minimising the risk. However, this is only one factor that is considered. Accordingly the reference to "must" should be replaced with "should".</p>
2 (7)	In the first paragraph, after "reviewing mine survey plans" a new bullet point should be added that provides "reviewing historical mining records for the area in which the mine is located"
2.1 (8)	In paragraph 4, the last bullet point should read, "other openings such as flooded or back filled shafts, drift and decline sumps"
2.1 (8)	The heading title "Sources from man-made structures" should have "excavations" added. "Excavations" should also be added in the first sentence under the heading.
2.2 (9)	The Note under the heading "Scheme of Protective Drilling" commences with the words, "it is not appropriate...". The use of the word "not appropriate" is too vague with respect to diameter, length and inrush potential. Drilling from the face is common practice for locating raise bore pilot holes, faults etc. This Note should be removed or redrafted.
2.3 (10)	In paragraph 7 the term "solid rock head" is not used in metalliferous mining. Further, "Septum" is not a commonly employed term.
2.3 (10)	In paragraph 8 the words "from the surface" should be deleted.
2.4 (10)	A fourth bullet point should be added under "estimate the pressure" which provides " the potential inflow rate".
3.1 (12)	The reference to "geographical" in the second bullet point should be "geological" (see Schedule 9.2 of the proposed Regulation).

4.1 (14)	The description in the Code of the accepted approach to determining the type of prevention control does not reflect the hierarchy of controls set out in the proposed Regulation 9.2.3. This should be amended to be consistent with the proposed Regulation 9.2.3 and other Codes (see for example, page 8 of the Roads and Other Vehicle Operating Areas Code).
4.1 (15)	Under the heading "Hazards from the Surface" a bullet point should be added which provides "assessing likely inflow rates and pathways and develop Trigger, Action Response Plan(s) to manage potential inflows"
5 (18)	In the second paragraph, the first sentence should be amended to read, "The critical issue to be addressed in under water mining mining beneath water bodies is to establish..'
5.5 (19)	In paragraph 5, the Code states, "waterbody and the roof of the horizon be determined". It should be clarified as to what is meant by "roof of the horizon".
6 (20)	The fourth bullet point in paragraph 2 should be amended to read, "Have new work methods or new equipment made the job safer been introduced. What is their impact on existing hazards, risks and control measures?"
6 (20)	The last bullet point in paragraph 2 should be amended to read, "if new legislation or new information becomes available, does it indicate warrant a review of] current controls may no longer be most effective ."
6 (20)	The heading "Monitoring Controls" should be replaced with "Monitoring". Monitoring is not a control, it measures effectiveness of a control and/or provides data which may require implementation of, or changes to, a control.
6 (20)	<p>The introductory paragraph is inaccurate. Regulation 9.2.4 requires that a review of control measures must be undertaken in prescribed circumstances not "whenever there are any changes associated with inundation and inrush". This paragraph should be amended to properly reflect the legal requirement set out in the proposed Regulation 9.2.4.</p> <p>It does not appear to be a legislative requirement that health and safety representatives "must be" consulted in undertaking a review of control measures. Accordingly, the reference to "must" should be changed to "should".</p>
8 (23)	References to "Emergency Management Plan" should be replaced with "Emergency Plan" to be consistent with the terminology used in the Regulation.
9.1 (24)	The first paragraph provided "The following plans are required at a scale of 1 in 4000". This scale appears small to indicate a 50m barrier pillar (ie 50m = 12.5mm on plan).

Emergency Response in Australian Mines

Section/(page number)	Comment
Scope and Application (5)	The reference to "emergency response plan" in the first paragraph should be replaced with "emergency plan" to be consistent with the terminology used in the proposed Regulation.
1 (6)	The requirement under the proposed Regulation to prepare and implement an emergency plan for the mine is contained in Regulation 9.2.32 and is not a requirement under Regulation 9.2.6 in relation to the content of the WHS Management System. Accordingly, the first paragraph should be clarified.
1.2 (7)	The reference to "principal hazard management plan" in the second bullet point should be replaced with "principal mining hazard management plan" to

	be consistent with the terminology used in the proposed Regulation.
4 (11)	The reference to "must" in the third paragraph should be replaced with "should" as an organisational chart detailing all functions and responsibilities during an emergency is not a legal requirement under the proposed Regulation. The fifth dot point seems to be missing "and" between "procedures" and "other".
4.1 (12)	There are various references on this page to things that "must" occur (see paragraphs 3, 7 and 8) which do not appear to relate to legal requirements under the proposed Regulation. These references should be replaced with "should".
5 (14)	The word "servicers" in the grey box should be replaced with "services". The Code provides that many emergencies may be notifiable incidents under the WHS Act. Section 38(8) of the <i>WHS Act 2011</i> (NSW) provides that the requirement to notify incidents under the WHS Act does not apply if the incident occurs at a mine to which the <i>Mine Health and Safety Act 2004</i> (NSW) applies or at a coal workplace. Accordingly, this sentence should be removed. The reference to "must ensure" under the heading "5.2 – Communication – underground mines" should be removed and replaced with "should consider" as the matters listed do not appear to be a legislated requirement. The fourth to ninth bullet points should be indented to relate to the where effective telecommunication should be provided to and from.
6.3 (15), 6.4(16), 6.5 (16)	There are various references to "must" in this section of the Code. As the Code does not set out the source for these statements, it is not clear whether these requirements are legal requirements or are recommendations. If they are legal requirements, the source of the requirement should be identified. Alternatively, if they are not legal requirements, the word "must" should be replaced with "should".
7.5 (20)	"Minimising" in the second bullet point is misspelt and the second last bullet point is missing.
7.18 (26)	The last word in the third bullet point should be "area" not "are".
Ventilation of Underground Mines	
Section/(page number)	Comment
General comment	The Code as well as the current <i>Mine Health and Safety Regulation 2007</i> (NSW) refers to a requirement that ventilation circuits at the mine do not allow air to recirculate. The proposed Regulation refers to uncontrolled airflows. There is no specific reference made to controlled and un-controlled recirculation with a clear definition of each of the above scenarios.
Scope and Application (3)	The word "how" should be inserted in the first sentence between "on" and "to". For clarity, this paragraph under the heading "What mines are covered" should be amended to be consistent with the proposed Regulation. For example, the reference to the Code applying to "all operating metalliferous and coal mines" should be replaced with "will apply to all mining operations at

	metalliferous and coal mines". The definition of mining operations should then mirror the definition contained in the proposed Regulations.
1.2 (5)	The first sentence under the heading "Duties" does not make sense. It appears the words "of workers" has been included in error.
1.2 (6), 3 (21)	The second paragraph provides that "It [the Ventilation Control Plan] sets out requirements for" and then lists a number of issues. It should be clarified that it is <u>recommended</u> that the Ventilation Control Plan includes requirements for the issues listed in the dot points.
1.2 (6)	<p>The first paragraph should be amended to properly reflect the requirement under Regulation 9.2.26. For example, the proposed Regulation 9.2.26 requires the mine operator to ensure that air monitoring is conducted at the mine in accordance with any risk assessment prepared under Regulation 9.2.11. Regulation 9.2.11 refers to a risk assessment conducted for the purpose of preparing a principal mining hazard management plan.</p> <p>The word "mine operator" is missing from the beginning of paragraph 3 under the heading "Air Monitoring".</p>
1.2 (6)	In paragraph 6 the first sentence should read, "The <u>mine operator</u> must keep records..."
2.1 (7)	The basis for the requirement in the 2nd bullet point of the last paragraph of 'minimum velocity for roadways – 0.3m/sec' is not clear from the perspective of oxygen levels. Similarly, the requirement for '0.06 m3/sec per kW of maximum ...' appears to be based on exhaust gas dilution and not oxygen levels. It is also not clear what the basis is for the reference to 'minimum quantity of 3.5m3/sec'.
2.1 (7)	<p>The second paragraph in the shaded box is missing part of the first sentence.</p> <p>Under the heading, "2.1 – Safe oxygen level", the Code provides that the mine ventilation system must provide air at sufficient volume and velocity to all places where people travel or work to maintain a safe level of oxygen, between 19.5% and 23.5% by volume. Given this is expressed as a mandatory requirement, the legal requirement in relation to the figure 23.5% should be identified.</p>
2.2 (9)	In the third last paragraph, the exposure standards for CO2 in general workplaces are "TWA 5,000ppm: STEL 30,000ppm". However, the exposure standards for CO2 in coal mines are "TWA 12,500ppm: STEL 30,000ppm". It is not clear why there is a higher minimum CO2 level permitted for coal mines than for general workplaces.
2.3 (16)	The Grey Box at the top of the page does not accurately reflect the requirements set out in the proposed Regulation 9.2.21. In particular it should be clarified that, <u>so far as is reasonably practicable</u> , the mine operator must eliminate or minimise the risk by means other than the use of PPE.
2.3 (19)	<p>The first sentence on page 19 duplicates the last sentence on page 18.</p> <p>The Code provides that a Heat Management Plan "must" be established and that work "must" stop if the wet bulb temperature exceeds 34 degrees Celsius. As the Code does not set out the source for this statement, it is not clear whether these requirements are legal requirements or are recommendations. If they are legal requirements, the source of the requirement should be identified. Alternatively, if they are not legal requirements, the word "must" should be replaced with "should".</p>
2.4 (19)	The Code provides that "where the wet bulb temperature exceeds 34 degrees Celsius work must be stopped, other than work to reduce the temperature." In the past, a maximum wet-bulb temperature of 32°C was allowed before work needed to stop. This was based on a minimum thermal work level (TWL) of 115 W/m ² at an air speed of 0.5m/s. 34°C in a minimum airflow of 0.3m/s would result in a lower TWL.
2.4 (19)	The Heading, "2.4 Spontaneous Combustion" should be replaced with "2.5 Spontaneous Combustion"

3 (21)	The reference to "must" in the third paragraph should be replaced with "should" as there does not appear to be a legal requirement that the Ventilation Control Plan be developed in conjunction with the other listed plans.
3.2 (22)	The second to fourth bullets points in the second paragraph require indenting.
3.2 (22), 3.3 (23)	The Code provides that "records, including data and plans, <u>shall</u> be kept of" certain things which include information which does not appear to be legally required to be kept under the proposed Regulation (for example, "location of ventilation devices"). Given the Code already sets out when records are required to be kept under the proposed Regulation, the word <u>shall</u> should be replaced with "should" unless it is a legislative requirement.
3.4 (23)	The Code provides in the fourth paragraph that "[F]ans <u>must</u> be designed...". As the Code does not set out the source for this statement, it is not clear whether the requirements are legal requirements or are recommendations. If they are legal requirements, the source of the requirement should be identified. Alternatively, if they are not legal requirements, the word "must" should be replaced with "should".
3.4 (23)	In the first bullet point under the heading "3.4 Fans" the words "or underground" should be included after "located on the surface".
3.7 (25)	Under the heading "3.7 Reference to Standards", the Code provides that the Ventilation Control Plan "shall" include a reference to standards and management plans that were referred to or consulted during its development. As the Code does not set out the source for this statement, it is not clear whether this requirement is a legal requirement or is a recommendation. If it is a legal requirement, the source of the requirement should be identified. Alternatively, if it is not a legal requirement, the word "shall" should be replaced with "should".

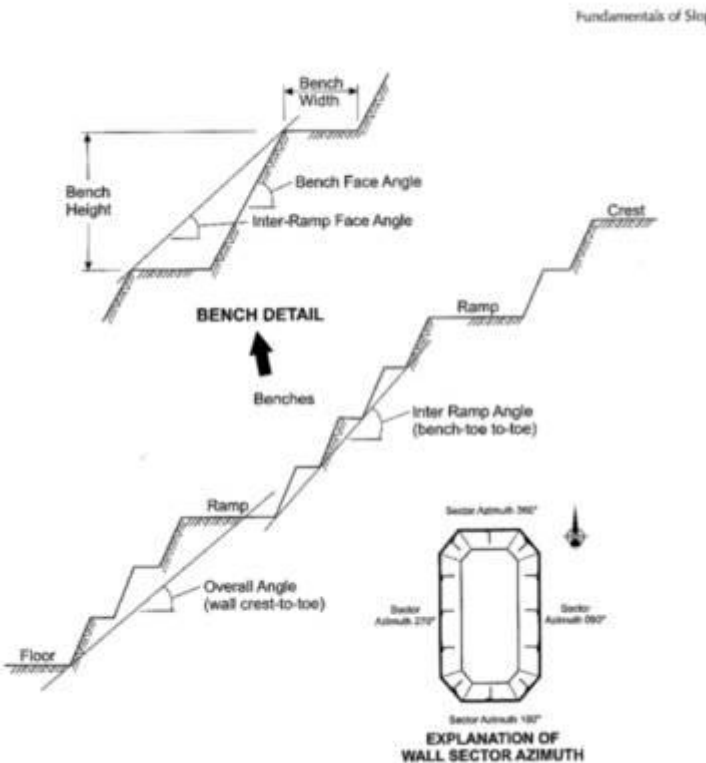
Survey and Drafting Directions for Mine Surveyors

Section/(page number)	Comment
General comment	The Code contains many acronyms. For ease of use, these acronyms should be included in an Appendix so they can easily be located. The Code must also be reviewed for consistency in use of the acronyms.
1 (6)	The Code refers to the compilation of a "Mine Workings Plan" for each mining operation. There is no such requirement in the proposed Regulation. It should be clarified whether this "Mine Workings Plan" is just a reference to the "survey plan" of the mine which is required by proposed Regulation 9.5.1.
1.3 (6)	Under the heading "1.3 – Functions of a Mine surveyor" the first dot point does not make sense.
3.6 (11)	<p>The description of the information required by the proposed Regulation is inaccurate. For example:</p> <ul style="list-style-type: none"> • The first bullet point should read, "the workings of the mine, including disused workings <u>and bore holes</u>" rather than "incorrectly located bores"; • There is no requirement for the survey plan to show the ventilation system, including all ventilation fans. Accordingly this reference in the second bullet point should be removed; • The words "associated with the distribution of electricity at the mine" in the third bullet point are not included in the proposed Regulation; • The last bullet point should refer to "entry and exit" rather than access and egress to be consistent with the terminology used in the proposed Regulation; and • Refuges (for underground mines) has been omitted from the Code but is listed in the proposed Regulation (see 9.5.1(3)(h)).

	It should also be clarified that the other information listed on pages 11-13 of the Code is recommended but is not a requirement of the proposed Regulation.
3.10 (14)	The first bullet point on page 14 requires clarification or rewording.
7.2 (18)	There is a reference to "statutory official". Given the proposed Regulation does not require any "statutory official" this reference should be replaced with "(or equivalent position)".
7.4 (18)	<p>The Code should make reference to the specific requirements of the proposed Regulation (see Regulation 9.2.29(2)) and set out what information the Regulations require to be shown on the ventilation plan in addition to the recommended information contained in the Code.</p> <p>The Code states that the Ventilation Plan should be updated monthly. In the event of no material change to operations, this is an onerous recommendation and should be extended to every 3 months.</p>
7.5 (18)	It should be clarified that there is no requirement under the proposed Regulation to have a "Fire Fighting Management Plan", although the Code recommends that one be prepared.
7.6 (19)	<p>It should be clarified that there is no requirement under the proposed Regulation to have a "Escape and Rescue Plan", although the Code recommends that one be prepared.</p> <p>The last paragraph of this section states that the "regulation requires review, and if necessary revision, when there has been a significant mine modification, at least every three months in relation to the identification of points of access, egress and refuges, and otherwise annually". This description only applies to the mine survey plan, not an Escape and Rescue Plan (see Regulation 9.5.2). This should be clarified in the Code. Further, the word "egress" should be replaced with "exits" to be consistent with the terminology used in the proposed Regulation.</p>
7.7 (19)	It should be clarified that there is no requirement under the proposed Regulation to have a "Surface Plan", although the Code recommends that one be prepared.
7.8 (20)	<p>It should be clarified that there is no requirement under the proposed Regulation to have a "Site Services Plan", although the Code recommends that one be prepared.</p> <p>It should also be clarified that there is no requirement under the proposed Regulation to have a "Tailings Dams/Waste Dump Areas" plan or "Emplacements Areas" plans, although the Code recommends that such plans be prepared.</p>
8 (22)	<p>The third bullet point does not make sense.</p> <p>The word "Assist" in the fourth bullet point should be "Assists".</p>
Health Monitoring	
Section/(page)	Comment

number)	
General Comment	This Code incorporates, but does not distinguish, between requirements under the General WHS Regulation and the proposed Chapter 9 of the Regulation. Where the Code refers to mandatory requirements, for clarity, the Code should specify the basis for the mandatory requirements.
1.2 (6)	Under the heading "Hazardous chemicals under Schedule 14 of the WHS Regulation" the word "when" needs to be inserted between "mandatory" and "these" to enable the sentence to make sense.
1.2 (6)	Schedule 14, List of Hazardous Chemicals should be added as an Appendix to this Code, rather than being referred to in the body of the Code.
2.1 (10)	In the first bullet point under section 2.1, should read, "An assessment of the risk performed by a competent person, suggests that there is a significant residual risk and indications of the residual risk The use of the term "significant risk to health" should be defined more fully such as greater than 0.5 OEL.
2.2 (11)	In section 2.2, in the second last paragraph, the word "any" should be deleted and replaced with "appropriate".
3.1 (13)	In the seventh bullet point, the word "and" should be replaced with "a". The last bullet point should also specify that the workers' written consent is not required if the mine operator is required by law to disclose the medical record.
3.6 (15)	The list contained in the Code in relation to what "must" be contained in a health monitoring summary does not reflect the requirements set out in Regulation 9.3.5(2). This should be clarified so that it is clear as to what is a legal requirement and what is recommended. Clarification should also be provided in relation to the requirement for a "health monitoring summary" under 9.3.5 of the Regulation and a "health monitoring report" under s374 of the Regulation.
3.6 (16)	Under the heading "Confidentiality" it should be clarified that the proposed Regulation sets out circumstances where the record may be disclosed to a third party without the workers consent (see 9.3.6(3) and 9.3.5(3)(b)). Accordingly, the Code should confirm that consent is not required if the mine operator is required by law to disclose the medical record.
4 (17)	The third paragraph sets out a number of steps the mine operator "must" take. As the Code does not set out the source for these steps, it is not clear whether these steps are legal requirements or are recommended steps. If they are a legal requirement, the source of the requirement should be identified. Alternatively, if they are not legal requirements, the word "must" should be replaced with "should".
Appendix E (29)	Appendix E, "Heat Stress" is an important health issue for mining. However this section should be re-written to focus on just the health surveillance requirements and hydration testing. The additional information contained in Appendix E should be removed and incorporated into a more comprehensive document covering all aspects of Heat Stress such as indices, monitoring equipment and preventative strategies to minimize heat stress.
Mine Closure	
Section/page number	Comment
1.2 (5)	Paragraph 2 under the heading "1.2 Who has responsibility for managing health and safety risks?" appears to have an additional "ensure" inserted which should be removed.

1.2 (5)	The first paragraph under the heading "Managing Risks" contains references to the Code providing practical guidance on how a "Ventilation Control Plan can assist in managing and controlling the risks associated with ventilation". This reference appears to be an error and should be removed.
1.3 (6)	The final paragraph does not make sense.
1.4 (7)	Under the heading, "1.4 – Who needs to be notified in the event of mine closure?", in the first sentence the word "body" should be inserted after the word "regulatory". In the last sentence the word "enclosure" should be replaced with "closure".
2.9 (11)	The first sentence under the heading "Radioactive Materials" does not make sense.
4.6 (16)	The second sentence under the heading "Minimum Controls for Mine Closure" does not make sense. Further, the fourth bullet point should have the word "reasonably" inserted between the words "is" and "practicable".
Ground Control in Open Pit Mines	
Section/page number	Comment
General comment	The Code contains many acronyms. For ease of use, these acronyms should be included in an Appendix so they can easily be located. The Code must also be reviewed for consistency in use of the acronyms.
Scope and Application (3)	The reference in the second paragraph to "documented Principal Hazard Management Plan (PHMP)" should read "Principal Mining Hazard Management Plan (PMHMP)" to be consistent with the terminology used in the Regulation. This reference will need to be amended throughout the Code. In the third paragraph under the heading "Scope and Application", the word "entering" should be replaced with "enter".
Scope and Application (4)	The second paragraph states that "...this Code has been prepared as what could be considered to be a performance based standard that states the result to be achieved rather than a detailed prescriptive methodology for achieving the result." This statement is inconsistent with the intent of approved codes of practice which is to be "a practicable guide to achieving the standards of health, safety and welfare required under the WHS Act and WHS Regulations (see paragraph 2 of the Foreword to the Code) and the scope of the code which is to provide "guidance to develop, implement and maintain a documented Principal Hazard Management Plan (PHMP) (sic) for ground stability" (see paragraph 1 of the Scope and Application).
Scope and Application (4)	The last sentence in the fourth paragraph should read, "The Code will help you to identify potential hazards and determine an appropriate strategy for design, construction and maintain maintenance of open pit slopes to an acceptable safety standard, so that safety risks associated with open pit mine slopes can be eliminated or minimised <u>so far as is reasonably practicable</u> ."
1.3 (5)	The shaded box on page 5 provides that "a person conducting a business or undertaking who has management or control of an open pit mine must not allow a worker to enter the mine unless the person has complied with the requirements under the WHS Regulations for open pit mines, and unless it can be demonstrated that the risk of pit wall instability hazards is negligible". This is not a requirement or duty which is expressly set out under the WHS Act

	or proposed Regulation and should not therefore be expressed as such a duty. This paragraph should be amended to properly reflect duties in relation to ground control under the proposed Regulation.
1.3 (6)	There is no requirement under the proposed Regulation for a formal "Ground Control Management Plan". Accordingly, the references to it being a "responsibility" of the mine operator to develop such a plan should be amended so that it is clear that the requirement to have a Ground Control Management Plan is a recommendation, not a legal requirement. This amendment would be consistent with page 27 of the Code which describes why a Ground Control Management Plan is recommended.
2.1 (7)	<p>The Slope Terminology needs updating to the industry terminology stated in Guidelines for Open Pit Slope Design: Read, 2009. Newcrest follow this standard in Inter Ramp Angle definition as “ The line of the Bench toes”. It is suggested that the diagram be updated to Figure 1.3, p5 as shown below:</p>  <p>Figure 1.3: Pit wall terminology</p>
2.3 (10)	The reference to "written descriptions of the proposed mining..." in the fourth paragraph should accommodate electronic versions.

2.3 (10)	It would be useful to include the following section (ie paragraph 4) in the Code for Ground Control for Underground Mines: 'It is also necessary, as part of the MPD process, to adopt a formal mining approval process for the development and/or mining of currently producing or undeveloped mining blocks. This formal mining approval process should include the production of plans, cross-sections and longitudinal projections of the mining block(s), as appropriate, plus a written description of the proposed mining work to be done and the mining issues that need to be addressed. A draft mining plan and the associated notes for the ore block(s) in question should be issued, in a timely manner, for discussion at subsequent MPD process meetings. Following discussion and resolution of the issues, final approved mining plan(s) and notes can be issued.'
2.4 (11)	It is suggested that the first sentence on page 11 should reference the open pit design guidelines by Read and Stacey (2009) as this is becoming recognised as the current international leading practice standard.
2.4 (11)	In the section commencing, "Prior to the commencement of mining, much needed subsurface information for pit slope design...", references should be included.
2.4 (18)	The section on "Design Acceptance" which referring to the application of Probability of Failure (POF) should also refer to the Guidelines for Open Pit Slope Design: Read and Stacey, 2009 as this is becoming recognised as the current international leading practice standard.
2.4 (19)	Table 1 is based on 1983 literature. The Content is inappropriate and the guidelines are out-dated. Please see comment above in relation the Open Pit Design Guidelines, Read and Stacey (2009).
2.5 (22)	In the last two paragraphs on page 22 there is reference to things that the mine operator "must" do. As these are not legal requirements under the proposed Regulation, the word "must" should be replaced with "should".
2.5 (22)	Under the heading, "2.5 Implementation of the slope design" the word "continued" in the second sentence should be replaced with "continue".
2.5 (26)	For completeness the open pit abandonment section could make reference to the Mine Closure Code. The second sentence in the last paragraph does not make sense and appears to be missing some words.
Appendix A (31)	In the definition for "Tectonic Forces" the words "cause can" should be replaced with "can cause".
Appendix B (32)	The Code lists a significant number of resources under the heading "other relevant information". It would be useful if these documents could be made available to mine operators.

Ground Control for Underground Mines

Section/page number	Comment
General comment	The Code contains many acronyms. For ease of use, these acronyms should be included in an Appendix so they can easily be located. The Code must also be reviewed for consistency in use of the acronyms.
General comment	The Code makes reference to "inundation" (for example, see section 1.1 on page 6). Specific reference should be made to the Code dedicated to Inrush

	and Inundation in relation to managing this risk.
Scope and Application (4)	The reference in the second paragraph to "documented Principal Hazard Management Plan (PHMP)" should read "Principal Mining Hazard Management Plan (PMHMP)" to be consistent with the terminology used in the Regulation. This reference will need to be amended throughout the Code.
Scope and Application (5)	<p>The third paragraph states that "...this Code has been prepared as what could be considered to be a performance based standard that states the result to be achieved rather than a detailed prescriptive methodology for achieving the result".</p> <p>This statement is inconsistent with the intent of approved codes of practice which is to be "a practicable guide to achieving the standards of health, safety and welfare required under the WHS Act and WHS Regulations (see paragraph 2 of the Foreword to the Code) and the scope of the code which is to provide "practical guidance to a mine operator on how to meet the requirement ...to develop, implement and maintain a documented Principal Hazard Management Plan (PHMP) (sic) for ground stability" (see paragraph 2 of the Scope and Application).</p>
Scope and Application (5)	In the second paragraph, the word "be" should be included between "inadvertently" and "entering" .
Scope and Application (5)	The word "verified" should be removed in the fourth paragraph.
1.1 (6)	In the second paragraph the word "be" should be added between "will" and "required".
1.3 (8)	The shaded box on page 8 provides that "A mine operator must not allow a worker to enter the mine unless the person has complied with the requirements under the WHS Regulation as they apply to the mine, and unless it can be demonstrated that the risk for hazardous ground movement or inundation is negligible". This is not a requirement or duty which is expressly set out under the WHS Act or Regulation and should not therefore be expressed as such a duty. This paragraph should be amended to properly reflect duties in relation to ground control under the proposed Regulation.
2 (11)	The fourth paragraph should be consistent with the formula set out on page 6 of the Code. That is, the reference to "ground characteristics" should be "site ground characteristics" (as set out in the acronym). The statement "[as defined by the geotechnical model" also appears to be included in error and should be removed.
3.1 (13)	An addition bullet point should be added to the list of risk modifying characteristics of a geotechnical structure which provides "termination characteristics of the discontinuity".
3.1 (13)	It appears that the Code is prescribing the use of scan line mapping and/or structural core logging to collect the information required. There is still a requirement and need to do rock mass quality assessments and many cases where the empirical support methods can be applied and used to determine the ground support.
3.1 (14)	The first paragraph provides that "...the mine operator should encourage geotechnical logging of a higher proportion of all diamond cored bore holes - as soon as the core becomes available (to avoid issues such as degradation of core samples)...". Guidance should be provided on what percentage of holes it is recommended should be logged.
3.2 (14)	Under the heading "Rock Stress" the second sentence should read "..having has both magnitude and direction in three principal, orthogonal stress directions..".
3.2 (14)	Under the heading "Rock Stress" , the first sentence in the second paragraph should read "..Inherent stress at both regional and site scales and can.. "

4.1 (22)	The first sentence on page 22 should read "...mine void that carry may may carry large regional loads.."
4.1 (22)	The third bullet point should read, "Variations (from pillar design) during due to mining methods or spalling over time...'
4.1 (22)	In relation to the section on "Ore extraction mining methods", a more satisfactory division of mining methods from a design point of view could be – division into pillar supported (eg Room and Pillar methods) artificially supported (eg open stoping with paste fill) no support (eg. Block caving). This allows an engineer to more effectively design the mine and assess the risks.
4.1 (24)	The last sentence in the second paragraph makes reference to "... fill transport and placement system, often at short notice, to fill large unplanned voids." Should the reference to unplanned be expanded to include planned voids?
4.1 (27)	The first sentence on page 27 should read, "...slab [that] is are invariably difficult."
4.2 (30)	In the fourth paragraph, the second sentence should be amended to read "...with empirical predictions, the mine operator must undertake one <u>or more</u> of the following actions; modify the empirical method accordingly; use alternative design methods; or derive any verify define specific limits for the.. ". This is required for any design method - experiential, empirical or numerical. The first step should be to investigate the discrepancy to attempt to explain it.
4.2 (30)	In the second last paragraph the word "of" should be inserted between "range" and "numerical".
5 (32)	In the second paragraph under the heading "Strapping", the words "or to stabilise pillars" should be included at the end of the sentence.
5 (33)	The last word in the paragraph under the heading "Other Surface Coatings" should be "mine sites".
5.1 (33), 5.1 (34), 5.1 (35), 6(41)	There is an "*" included beside the reference to "ground conditions" (page 33), rock mass, rock mass strength (page 34 and 35) and groundwater (page 41). It is not clear what the asterisk is referring to.
5.1 (35)	The first sentence on page 35 refers to "all information used to establish effective ground control is to be maintained within the PHMP". The reference to "all" should be qualified by the statement "so far as is reasonably practicable" as there may be circumstances where it is not appropriate for "all" information to be included.
5.3 (39)	The fourth last bullet point should read "...maintained and operated <u>ed</u> at the recommended..."
6 (40)	In paragraph 5 there is a reference to "(the geotechnical model" which appears to be an error and should be removed.
6 (40)	In the third paragraph, the word "a" should be inserted between "Similarly" and "mine operator".
8 (47)	Under the heading "Element 2" there is a reference to the development and implementation of a "'ground control management plan' (PHMP)". A ground control management plan is a recommendation of the Code and is not a required Principal Mining Hazard Management Plan under the Regulations. Accordingly, the reference to PHMP should be removed.
Appendix A (49)	The Code lists a significant number of resources under the heading "other relevant information". It would be useful if these documents could be made available to mine operators. The seventh reference listed is incomplete.

Appendix B (52)	The definition of "Abutment" should be amended to read, "The areas of unmined rock at the edges of a stoping block that carry <u>may</u> <u>may</u> carry large regional..."
Appendix B (54)	The definition of "Ore reserve" should be amended to read "That part of a mineral resource that is considered to <u>be</u> mineable in terms of tonnage and grade following an appropriately detailed study of the technical and economic criteria and data. The plural may also <u>be</u> used to refer to a list of..'
Appendix B (54)	Definition of Reinforcement. Does it have to be tensioned? The definition of "Reinforcement" refers to "tensioned rock bolts". Clarification could be made that rock bolts do not always need to be tensioned to provide reinforcement.
Appendix B (55)	The definition of "Scaling" should also refer to the use of mechanical scaling.
Appendix B (56)	The definition of Tectonic Forces should be amended to read "...which cause can <u>can cause</u> earthquakes ..'
Appendix C (59)	The last box of the diagram, labelled 'Determine Rock Support and Reinforcement' should not be limited to just rock support and reinforcement and should include a separate option to barricade the heading and seek further advice.
Appendix D (61)	The Table needs to include RL in the location information.
Underground Winding Systems	
Section/page number	Comment
General comment	The Code appears to be largely derived from the Western Australian <i>Mines Safety and Inspection Regulations</i> 1995 (WA) which are considered dated and no longer leading practice. For example, the criteria for ropes appear to be based on designs from the 1960s and 1970s and are not relevant to current accepted design practices. This Code should be carefully reviewed to ensure that it reflects leading practice. Newcrest would be pleased to participate and contribute further to any review initiative.