COMPLIANCE CHECK to the AEISG CODE

AEISG Code: On Bench Practices for Open Cut Mines	Date:
Site/ Project:	

Compliance Details:

AEISG Section	Relevant Requirements	Describe what is in place to demonstrate compliance	Complies? (Y/N/NA)
1 SCOPE All On-Bench Practices fully conform to the requirements set out in the code.			
2. DEFINITIONS Refer to definitions in code used throughout the document.			
3 GENERAL REQUIREMENTS			
3.1 Personal protective and special equipment.	All specialised personal and special protective equipment is approved for the task.		
3.2 Competencies and training	A training system exist and includes competencies for: • Induction program for all employees. • Training package for working with explosives • Training package(s) for using explosive systems electric or signal tube delay detonators, detonating cord, electronic initiation systems, presplit products • Training in the proper use and care of equipment. • Training in emergency response evacuation procedure.		

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3.2 Competency	• Vehicle competencies and authorisations • Competency and authorisation of employees (including licensing and security clearance). • Competency and authorisation of employees Shotfirer, Assistant Shotfirer, Magazine Keeper, Blast Controller & Blast Guard • Demonstrated competence in relation to agreed radio protocols. • A record of personnel who are deemed competent and who are authorised to access explosives and precursors.		
4. RISK ASSESSMENT			
4.0 Risk Assessment	A detail risk assessment has been conducted and includes hazards and controls associated with the management of: • Planning and design • Bench preparation and demarcation • Priming, charging and stemming blastholes • Blast clearance & shotfiring		
4.1 Factors Considered in Assessing Risk	Does the risk assessment consider? • Location of protected works • Known and likely geological factors including ground water and voids. • Access to/ from the blast area • Interaction with other mining processes such as drilling and excavation. • Slips, trip fall, and manual handling hazards. • The application of specific bulk products i.e. suitability of for use in elevated temperature conditions. • previous history of flyrock, over pressure or dust.		

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	• Forecast weather conditions. • Location of equipment and personnel at time of firing and radio communication black-spots • Documented blast design parameters (hole diameter, burden and spacing).		
5 BLAST PLANNING AND RECORD KEEPING			
5.1 Blast Planning.	The blast plan and design has considered the equipment to be used to ensure all blastholes can be safely accessed drilled to depths and angle.		
	Has the Interaction between drilling equipment and blast crews been minimised to prevent unnecessary additional risk including? • noise and dust levels; • potential for fluid injection injury if there is a hydraulic line burst; • clearance separation from the front deck of 2x drill rod lengths in case the drill rod dislodges from the carrousel; • access to the drill rig for servicing and in an emergency; and • a delineated exit path for the drill at the completion of drilling.		
	The sleeping of blasts has been assessed with consideration given to: • maintaining restricted access and explosives security, • appropriate demarcation, guarding and supervision. To also be effective during any night shifts.		

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5.2 Record Keeping	Do the blast records include summary sheets showing; • blast pattern, total drill metres, • bulk explosives requirements, design powder factor, stemming requirements, and quantities/types of initiating explosives and blasthole accessories. • Risk assessments for various stages of the process • Drill pattern showing blasthole layout blasthole ID and • Depth angle, direction and diameter of all blastholes. • Charge sheets detailing location of primers charge mass and length.		
	The blast records contain copies of the tie-up plan • Blast clearance plans • Magazine records • Bulk explosives delivery records • Manifests carried on any vehicles carry initiation explosives • The shotfirers daily report • A video record of the blast event.		
6. BENCH PREPARATION AND DEMARCATION			
6.1 Bench Preparation	Adequate bench preparation is provided to suit all equipment operating on the blast bench, including drills, MPU's, stemming equipment, light vehicles, refuelling vehicles and water carts. Bench preparation includes adequate turn-around room, or drive-through access, for vehicle traffic		

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	on/through the blast area, such that vehicles do not need to tram over blastholes is provided.		
	• A minimum stand-off distance is provided from high-walls of 10m • The high-wall clearance zone is delineated with a catchment berm. • The crest berm or windrow is constructed equivalent to half the height of the largest vehicle wheel working on the bench.		
	Bench surfaces are adequately prepared to provide a safe work area for the shot crew without unnecessary trip/fall hazards or climbing required.		
	A designated vehicle parking area and tipping areas for stemming material are established on the blast area.		
6.2 Demarcation and Communication of Active Blast Area	Physical demarcation and signage is in place to prevent access to the blast area (or on bench reload area).		
	A traffic management plan is used to define entry/exit points for vehicles, park-up areas reload areas, and the required loading sequence.		
7. MEASURING AND PRIMING OF BALST HOLES			
7.1 General	A process is in place for measuring and priming blastholes that includes • Charging activities are not compromised by other/ other activities. • A clear blasthole identification system is implemented. • A clear path is defined for drill rigs when redrills are required. • Over drilled blastholes are backfilled		

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	with drill cuttings. • Abandoned blastholes are identified and fill with stemming material. • Procedures for elevated temperature and/or reactive are in place.		
7.2 Measurement	• All blastholes are measured prior to charging • Blastholes are measured with a Non-ferrous weighted tape or cord. • Adjusted charge quantities, gravel decking and increased stem heights are implemented in front rows to reduce flyrock or overpressure risk**.** • Temperature measurements are conducted and recorded for reactive or hot ground.		
7.3 Priming	A record of initiating explosives taken from the magazine, used, and returned to the magazine, is maintained.		
	• Boosters and detonators are kept separate until placement in the blasthole. • Boosters and downlines are secured with a peg at the collar of blasthole. • Initiating explosives are placed on the same side of each blasthole away from charging stemming equipment. • In water-filled blastholes the primer(s) is lowered to the bottom of the blasthole and pulled up into the explosive column as it is charged. • Primed, downlines are secured at the blasthole collar.		

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	• Primers are not left unsupervised overnight in uncharged blastholes. • All waste packaging is collected, and dispose of according to site waste management practices.		
8.0 **CHARGING & STEMING BLASHOLES**			
8.1 Bulk Explosive selection and Delivery	Bulk explosives are charged under the supervision of the Shotfirer.		
	Blasthole loading is sequenced in such a manner that water displaced from wet holes does not run into previously loaded dry holes.		
8.2 Managing vehicles in blast area	A spotter is used to assist the MPU operator to manoeuvre close to; • walls and crests, • in close proximity to blastholes on tight patterns, • when reversing or turning around on the bench, • in any situation where, restricted visibility presents a risk.		
	Blastholes are charged systematically, in sections on large shots.		
8.3 Charged quantities	• Column rise during charging is checked • Bulk explosive cup or bucket densities are routinely checked each load. • Excess product has been removed from overcharged blastholes. • Charging is halted if bulk explosives appear to be running away. • The location of overloaded blastholes is communicated to the Shotfirer		
8.4 Stemming	• Stemming is placed to design depths with column height checked after charging.		

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	• Stemming does not commence in gassed blastholes until explosives have had sufficient time to reach their design density		
9.0 SURFACE TIE-UP			
9.1 General	Consideration is given to • Removal of non-essential vehicles from blast area • The number of surface delays required for the tie-up • Slumped holes are topped up with stemming and recorded • Weather conditions		
9.2 Signal tube systems	Initiation point inter-hole and inter-row delays and firing direction are shown on a tie up plan.		
	Blastholes are connected along row or echelons leaving control row until last.		
	Downlines are checked for damage when connecting surface delays.		
	Design capacity of connectors is not exceeded and Surface lines are not pulled to tight.		
	At completion of tie up the shot is visually inspected by shotfirer.		
9.3 Electronic systems	A tie-up plan exists for each hole/deck and programming/logging path is available for connection.		
	Test for leakage is conducted Test of firing line continuity or radio		

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	communication is conducted prior to firing.		
10.0 EMERGENCY RESPONSE			
	Emergency response scenarios exist for all on-bench activities that include; • Lightning strike • Fire on an explosives vehicle • Heating caused by elevated temperatures or reactive ground.		
11.0 BLAST CLEARANCE, BLAST GUARDING AND FIRING OF SHOT			
	Blast guarding procedures are aligned with the AEISG code of practice Blast guarding in an open cut mining environment.		
	Consideration is given to; • Over loaded or under-burden holes • the presence of broken ground increasing the risk of flyrock, overpressure or fume		
12.0 POST BLAST ASSESSMENT AND REPORTING			
	A post- blast risk assessment is conducted after the shot is fired and shot firer reports; • All explosives have detonated and no misfires are evident. • Any unsafe wall or crest conditions • Access to and demarcation around the blast area is established.		
	A documented blast hand-over process is observed and communicated by the shotfirer.		
	All documentation associated with the blasting activities is completed in accordance with the site procedures.		

Areas of Non-conformance and Action Plan

Non Conformance Number	Section Number	Action Plan	Action by	Due Date	Completion Date	Comments
1						
2						
3						
4						
5						
6						
7						
8						

Compliance check summary

The observed on-bench practices complies/does not comply with the AEISG Code of Practice – On-Bench practices for open cut mines and quarries.

Name of assessor/s …… **Date** ……

Signature/s …… **Date of next review** ……