5.1 Additional Controls

After a Trigger has been identified and an Alarm level put in place additional controls above ***Working Near Slopes and Crests Standard*** are required and standoff's necessary may be greater than primary standoff distances. These additional controls are referred to as Primary Access Controls. Affected areas should be delineated with an earth bund typically 2 m high. Note that additional bunding and/or restricted access may be required as determined by the Statutory OCE or specified within the geotech report for TARP 2 hazards and above.

- For TARP Level 1 – personnel required to enter / work within ***Working Near Slopes and Crests Standard*** standoffs must work under a JHA completed and signed off by the Supervisor Production and Statutory OCE.
- For TARP Level 2, 3 and 4 - personnel required to enter / work within ***Working Near Slopes and Crests Standard*** standoffs must have a Risk Assessment approved and signed off by the relevant Supervisor Production, Statutory OCE and Geotechnical Engineer (or representative).
- Note as Level 4 events breached controls and could have impacted personnel and / or equipment they must also be investigated to determine root causes in order to prevent future incidents.

Note, that if a TARP area is classified as an Exclusion zone no work can occur in the area (i.e. access is unable to be obtained through risk assessment). Exclusions zones must have a hard barrier.

The location and TARP level of geotechnical hazards are entered into the **HazRT database** for awareness and tracking. Additional controls typically specified in a geotechnical report for TARP 2 hazards and above are entered in HazRT by the geotechnical engineer. These controls must be marked as compliant in HazRT by Stat OCE once implemented.

MAC's ***60 Seconds 4 Safety and Job Hazard Analysis Procedure*** details the process of conducting 60 Seconds for Safety and JHA's.

Appendix 1

MAC-STE-MTP-036 Geotechnical Ground Control TARP HIGHWALL AND ENDWALL					
Alarm Level	**NORMAL**	**LEVEL 1 Minor Hazard**	**LEVEL 2 Major Hazard**	**Level 3 Failure Within Controls**	**Level 4 Failure Exceeding Controls**
Description	No specific geotechnical hazard of significance observed	No indication of potential for failure; triggers described as minor or moderate	Failure could occur; triggers described as significant	A failure (larger than isolated rockfalls) that was contained/controlled	A failure that has breached controls and had the potential to cause serious injury or equipment damage

Triggers (Geotechnical hazard indicators)	- Walls excavated to designs - Nil to minimal cracking or loose material on wall - Nil to minor rocks falling from highwall - Dry Conditions - Presplit barrels are visible (Where the wall is presplitted) - No obvious signs of geotechnical instability	- Over steepened or undercut slope or slope not excavated to design - Moderate cracks, loose material on the wall; minor cracking / heaving on bench; minor potentially unstable and or unfavourable geological structures (e.g. faults, dykes, heavily jointed rock) - Wet Conditions (when production has partially / fully ceased due to wet weather), water build up within 20m of the crest, abnormal water flow out of a slope (Significant visible changes in water make) - Localised rocks falling from highwall within standoff - Moderate material (cling-on) left on wall in front of pre-split line - Minor blast damage - >50% full catch bench - Missing windrow on access roads. - Windrow is not built to the standard or in the incorrect position - Sign of significant deteriotaion on existing windrow (washouts, partially removed etc).	- Significant deviation from slope design - Monitoring devices showing an unacceptable rate of movement (imminent failure) - Significant potentially unstable structures identified (heavily jointed rock, faults) forming a wedge or toppling structure - Significant loose material, cracking, or lipping, - Excessive rock falls from highwall falling within Standoff - Ongoing/increased rilling or slope showing signs of movement (including noise and dust) - Significant material (cling-on) left on wall in front of pre-split line - Excessive abnormal water flows, water ponding, obvious sinkholes or depressions, or water flowing into/through drillholes or structures - Significant water or mud build-up above working areas (a potential inrush hazard) - Significant blast damage (blast-over material fills the benches below) - Floor heave -Seismic event felt locally* (magnitude of ≤4.0)	- Failure of any pit wall that was contained within the safe-working-distance /stand-off or controls - Activation of monitoring alarm	-Failure of any pit wall that has affected an area outside the standoff / safe working distance (i.e. failure breached controls in place), and had the potential to cause serious injury or equipment damage - Activation of monitoring alarm -An earthquake with magnitude of >4.0 (Richter scale)
Criteria for downgrading trigger level		A Level 1 Trigger can be downgraded by OCE if the hazard is no longer present.	A Level 2 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Superintendent - Statutory Compliance.	A Level 3 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Manager of Mining Engineering.	A Level 4 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Manager of Mining Engineering.

*note these actions / responses only apply when a seismic event occurs.

Actions and Responsibilities					
Alarm Level	**NORMAL**	**LEVEL 1** **Minor Hazard**	**LEVEL 2** **Major Hazard**	**Level 3** **Failure Within Controls**	**Level 4** **Failure Exceeding Controls**
Triggers	Refer to Triggers page of TARP for detailed information on indicators of geotechnical instability in the following mining areas: Highwall and Endwall				
Primary Access Control and/or Geotechncal Exclusion Zone	Adhere to Working Near Slopes and Crests Standard and/or Geotechnical Exclusion Zone recommendations	Personnel required to enter / work within **Working Near Slopes and Crests Standard** standoffs must work under a JHA signed off by the Supervisor Production and Statutory OCE (minor geotechnical hazard present)	Personnel required to enter / work within **Working Near Slopes and Crests Standard** standoffs and/or Geotechnical Exclusion Zone must have a JHA approved and signed off by the relevant Supervisor Production, Statutory OCE, Mining Superintendent and Geotechnical Engineer.		
Mineworker	-Monitor work area for geotechnical Hazards - Adhere to Working Near Slopes and Crests Standard -Ongoing inspection of work area for geotechnical hazards	-Adhere to **Working Near Slopes and Crests Standard,** cease work within standoff zones unless a specific wet weather JHA is completed and signed off by the Supervisor Production -Notify Supervisor Production and other Mineworkers in the affected area	-Immediately advise all Mineworkers to leave the affected area and secure accesses -Immediately notify Supervisor Production -Cease work within standoff zones until areas inspected by Supervisor Production or Statutory Open Cut Examiner* - After a sesimic event (earthquake) felt locally, cease work within standoffs until area is inspected by Supervisor or OCE	-Call an emergency if required -Act in line with the **Emergency Procedure** if required -Immediately advise all Mineworkers to leave the affected area and secure accesses -Immediately notify Supervisor Production - After a sesimic event (earthquake) with magnitude of >4.0, cease work until area is inspected by OCE or Geotechnical Engineer	
Supervisor Production	-Ensure Working Near Slopes and Crests Standard is adhered to -Ensure adequate survey control is in place -Conduct regular work area inspections as per **Inspection Plan** and	-Notify Statutory OCE -Implement Risk Controls and Barricading as required -Communicate to relevant parties -Implement wet weather controls -Increase frequency of	-Notify Statutory OCE and Mining Superintendent -Verify all mineworkers have left the affected area -Implement Risk Controls and Barricading as required -Communicate to relevant parties -Increased frequency of inspection as required -Participate in and sign-off hazard assessments -Inspect mining areas after seismic event*	-Call an emergency if required -Immediately notify Statutory OCE -Verify all mineworkers have evacuated the affected area -Implement Risk Controls and Barricading as required	

	compliance to plan checks	inspection as required -Participate in and sign-off hazard assessments		-Act in line with the **Emergency Procedure**
Statutory Open Cut Examiner (OCE)	-Conduct statutory inspections in line with the **Inspection Plan** -Verify Working Near Slopes and Crests Standard is adhered to	-Assess area for barricading and consult Supervisor Production -Change access to reflect Level 1 TARP condition -Include TARP condition on HazRT report -Participate in and sign-off hazard assessments -In consultation with Supervisor Production determine when conditions have sufficiently stabilised to change access back to Normal -Implement wet weather controls	-Notify Mining Engineering Manager and Geotechnical Engineer -Ensure the affected area is adequately barricaded in consultation with the Supervisor Production -Change access to reflect Level 2 / Level 3 TARP condition -Include TARP condition on HazRT report -Participate in and sign-off hazard assessments -During inspections, verify correct TARP level and barricading is in place -Inspect mining areas after seismic event*	-Immediately notify Mining Engineering Manager and Geotechnical Engineer -Ensure the affected area is adequately barricaded in consultation with the Supervisor Production and Geotechnical Engineer -Change access to reflect Level 4 TARP condition -Include TARP condition on HazRT -Participate in and sign-off risk assessments -During inspections, verify correct TARP level and barricading is in place -Act in line with the **Emergency Procedure**
Mining Engineering Manager	-Conduct Statutory Inspections as per the **Inspection Plan**		-Notify GM and appropriate 3rd parties as required -Initiate IMT if required in line with the **Incident Management Plan** -Support event investigation if required (formal investigation if business financial threshold reached)	
Superintendents (reporting to Manager Production Overburden, Manager Production Coal and Manager Production Services)	-Verify their personnel are trained and competent in ground control awareness -Verify excavation compliance to Design		-Review hazard assessments (JHA) ensuring Geotechnical Engineering recommendations are included and appropriate controls in place. -Confirmation of in field inspections of the work area -Communicate operational issues to Short Term Planning Superintendent.	-Notify Manager and other affected Superintendents of failure and restricted pit access -Review and sign-off on risk assessments (JHA) ensuring Geotechnical recommendations are included and controls in place. -Communicate operational issues to Short Term Planning Superintendent.

Manager(s) Production (includes Production Overburden, Production Coal and Production Services)	-Verify excavation compliance to design		-Support event investigation if required (formal investigation if business financial threshold reached)	-Ensure all relevant parties and Geotechnical Engineer are involved in recovery plan -Support event investigation if required (formal investigation if business safety threshold reached from control breach)
Manager Technical Services (this position is the Risk Owner for the Fall of Ground material risk)	-Ensure appropriate survey control is provided -Verify design process is adhered to		-Ensure event investigation is Initiated by appropriate manager if required, in line with **Event Investigation Protocol** (formal investigation if business financial threshold reached)	-Ensure event investigation is Initiated by appropriate manager if required, in line with **Event Investigation Protocol** (formal investigation if business financial threshold reached) -Review relevant areas of the **Slope Stability Management Plan** in line with the event.
Geotechnical Engineer / Geotechnical Function	-Ensure design criteria is provided to meet short and long term plans -Provide advice as required for design and execution	-Conduct regular follow-ups and confirm if actions or recommendations issued have been complied with. -Notify OCE of any hazards identified or reported that are not on the shift report -Assist OCE in setting TARP Level as required -Advise OCE in assessing requirements for monitoring device (e.g. radars) location, setup and interpretation of readings as required	-Complete geotechnical assessment and issue recommendations to reduce risk as required -Enter controls into HazRT -Ensure controls are issued as soon as practically possible -Verify the implementation of controls as soon as practically possible -Assess applicability of geotechnical monitoring -Advise Supervisor Production, Statutory OCE and area Superintendent of any changed conditions (including TARP level) as a result of specialist monitoring under supervision of Geotechnical Services -Review and sign-off hazard assessments	-Complete geotechnical assessment and issue recommendations to reduce risk as required -Enter controls into HazRT -Ensure controls are issued as soon as practically possible -Verify the implementation of controls as soon as practically possible -Assess applicability of geotechnical monitoring -Review and sign-off hazard assessments -Participate in/support any event investigations -Inspect mining areas after seismic

				event - in liaison with the OCE and MEM

Appendix 2

MAC-STE-MTP-036 Geotechnical Ground Control TARP TRUCK DUMP LOWWALL					
Alarm Level	**NORMAL**	**LEVEL 1** **Minor Hazard**	**LEVEL 2** **Major Hazard**	**Level 3** **Failure Within Controls**	**Level 4** **Failure Exceeding Controls**
Description	No specific geotechnical hazard of significance observed	No indication of potential for failure; triggers described as minor or moderate	Failure could occur; triggers described as significant	A failure (larger than isolated rockfalls) that was contained / controlled	A failure that has breached controls and had the potential to cause serious injury or equipment damage
Triggers (Geotechnical hazard indicators)	Dump Height Triggers -Windrows to standard (1.8m) -Dump height ≤20m, Weathered overburden, in pit dump -Dump height ≤40m, fresh competent overburden, competent base - free of water and Mud, floor dip ≤11° (19%) -Dump height ≤20m of fresh competent overburden over coarse reject block tip. Physical Triggers -Nil to minimal cracking on	Dump Height Triggers -Windrows below standard (<1.8m) or incompetent material -Missing windrow at dump crest or Dump crest windrow height <1/2 of largest truck tyre. -Sign of significant deteriotaion on existing windrow (Washouts etc). -Dump height 40 - <50m, fresh competent overburden, competent base - free of water and Mud, floor dip ≤11° (19%) -Dump height 20 - ≤ 40 m of fresh competent overburden over block tip of coarse reject. Physical Triggers -Dumping of significant volumes of reject, sticky, wet or fine material, not mixed over the tip head as per Design, Construction	Dump Height Triggers -Weathered overburden dumped on pit floor or >20m in pit dump -Any dumping of Incompetent overburden (Sub Cat 1 e.g. low strength clay / mud indicated by trucks bogging on dig floor) -Dump height ≥ 50m, fresh competent overburden, competent base - free of water and Mud -Floor dip ≥11° (19%) -Dumping over a highwall/endwall -Dump height > 40 m of fresh competent overburden over coarse reject block tip. -Co-disposing weathered overburden in lifts >20m without consultation with Geotechnical Engineer	-Dump failure that was contained within safe-working-distance/stand-off or controls -Activation of monitoring alarm	-Large scale dump failure that has affected an area outside the stand-off / safe working distance (i.e. failure breached controls in place), and had the potential to cause serious injury or equipment damage -Monitoring showing an unacceptable rate of movement (i.e. imminent failure) -Activation of monitoring alarm -An earthquake with magnitude of >4.0 (Richter scale)

	dump face or floor - Nil to minor rocks falling from highwall -Competent floor -Ground is dry or free draining -Course reject material dumped and separated with waste Stable -Dump constructed to design -No obvious signs of geotechnical instability	and Maintenance of Dump Areas -Minor dump settlement or cracking or minor skin failure on dump face -Minimal rocks observed rolling down the face -Abnormal amount of Course reject material or wet / poor quality material -Adverse weather with substantial run off or localized flooding, shallow sinkholes on dump surface -Significant abnormal water flow from the toe of the dump -Dumping over ramps -Poor dump geometry (bull nose) or not dumping to Design -Undercut slope dump toe -Not dumping to design ->50% full catch bench with active dumping above	-More than 3 consecutive lifts of Cat 1 (Refer to MAC-PRD-STD-003) Physical Triggers -Significant settlement of dump -Significant cracking, heaving, bulging, lipping, toe creep, ravelling or scarp development - Monitoring showing an unacceptable rate of movement (i.e. imminent failure) -Dumping into water/mud base -Weak floor material/ shears - Significant water seepage from dump toe -Excessive abnormal in/outflows suggesting draining of significant source of water -Large or Deep sinkholes/cavities on the dump -Truck dump crest advance quickly when dumping into mud and water -Seismic event felt locally* (magnitude of ≤4.0)		
Criteria for downgrading trigger level		A Level 1 Trigger can be downgraded by OCE if the hazard is no longer present.	A Level 2 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Superintendent - Statutory Compliance.	A Level 3 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Manager of Mining Engineering.	A Level 4 Trigger can be downgraded following recommendation from the Geotechnical Engineer with approval from the Manager of Mining Engineering.

Standard Dump Controls ~ Geotechnical	-Normal dump controls as per MAC –PRD-STD-003	-Tip short alarm activated where fitted -Increased inspections by OCE/supervisor and operators -Rescue trailer available in work area -V drain / windrow installed 10m from tip head -Trucks dump 10m short and dozer push square to face -Cut down dump after cracking / slumping as required with dozer. -Dozer to cut down dump square to face working away from a buttressed safe area -Ripping of ramp surface prior to dumping if necessary Note: rescue trailer not required for isolated low windrow events where tip head instability conditions are not present.	-JHA signage -Geotechnical Engineer approved JHA	-Mineworkers to immediately leave the affected area and secure access -JHA signage -Geotechnical Engineer and Mining Engineering Manager approved JHA to reestablish tip head.	-Mineworkers to immediately leave the affected area and secure access -JHA signage -Geotechnical Engineer and Mining Engineering Manager approved JHA to reestablish tip head.
JHA Escalations	JHA to be developed if additional controls are required or elevate to Level 1	JHA to be developed and approved by Statutory OCE or Superintendent if additional controls are required or elevate to Level 2	Geotech approved JHA Mandatory. Elevate to Major Failure if JHA controls insufficient	Geotech and MEM approved JHA mandatory	Geotech and MEM approved JHA mandatory

Actions and Responsibilities					
Alarm Level	**NORMAL**	**LEVEL 1** **Minor Hazard**	**LEVEL 2** **Major Hazard**	**Level 3** **Failure Within Controls**	**Level 4** **Failure Exceeding Controls**
Triggers	Refer to Triggers page of TARP for detailed information on indicators of geotechnical instability in the following mining areas: Truck Dump Lowwall				
Primary Access Control	- Adhere to Working Near Slopes and Crests Standard	- Personnel required to enter / work within **Working Near Slopes and Crests Standard**	- Personnel required to enter / work within **Working Near Slopes and Crests Standard** standoffs must have a JHA approved and signed off by the relevant Supervisor Production, Statutory OCE, Mining Superintendent and Geotechnical Engineer.		

		standoffs must work under a JHA signed off by the Supervisor Production and Statutory OCE (minor geotechnical hazard present)		
Mineworker	-Execute dump to current design and daily production plan -Adhere to MAC-PRD-STD-003 Design, Construction and Maintenance of Dump areas Standard -Maintain visual monitoring of work area for Geotechnical hazards or signs of instability (and include BHP 60s for safety) -Adhere to Working Near Slopes and Crests Standard Notify Mining Supervisor if signs of instability are identified. -Ongoing inspection of work area for geotechnical hazards	-Adhere to **Working Near Slopes and Crests Standard,** cease work within standoff zones unless a specific wet weather JHA is completed and signed off by the Supervisor Production -Notify Mining Supervisor and all Mineworkers in the affected work areas if Level 1 triggers are identified. -Increase tip head inspections -If cracking or slumping occurs notify supervisor and re-establish tip head -Adhere to the Dump TARP Level 1 standard dump controls within MAC-PRD-STD-003 Design, Construction and Maintenance of Dump areas Standard	-Immediately notify Supervisor Production -Immediately advise all Mineworkers to leave the affected area and secure accesses -Cease work within standoff zones until areas inspected by Supervisor Production or Statutory Open Cut Examiner* -After a sesimic event (earthquake) felt locally, cease work within standoffs until area is inspected by Supervisor or OCE Operate under risk assessment where required	-Call an emergency if required -Act in line with the **Emergency Procedure** if required -Immediately notify Mining Supervisor if a major failure is identified. -Immediately advise all Mineworkers to leave the affected area and secure access - After a sesimic event (earthquake) with magnitude of >4.0, cease work until area is inspected by OCE or Geotechnical Engineer
Supervisor Production	-Ensure Working Near Slopes and Crests Standard is adhered to -Ensure appropriate survey controls are in place - Execute dump to current design and daily production plan - Adhere to MAC-PRD-STD-003 Design, Construction and Maintenance of Dump areas Standard -Conduct regular work area inspections as per **Inspection Plan** and compliance to plan checks	-Notify Statutory OCE and Mine Operations Superintendent and activate Level 1 Tip short alarm through dispatch -Implement Risk Controls and Barricading as required -Communicate to relevant parties - Review if additional controls and a JHA is required -If required, arrange for the affected area to be assessed by the Statutory OCE for the need for barricading or cordoning off / JHA development. -Participate in and sign-off hazard assessments -JHA signage to be installed if required -Ensure TARP Level 1 dump conditions and JHA (if required) are effectively	-Notify Statutory OCE and Mining Superintendent -Verify that all mineworkers have evacuated the affected area until a JHA is developed -Implement Risk Controls and Barricading as required -Ensure hazard is effectively communicated to all personnel working in or near the affected work areas -Handover details of dump condition to oncoming Mining Supervisor for inclusion in pre-start meetings and TARP Condition -Increased frequency of inspection as appropriate to the hazard and verify correct TARP level. -Participate in and sign-off hazard assessments -Inspect mining areas after seismic event*	-Determine whether an emergency call needs to be raised and if so make emergency call and assist in coordinating the initial emergency response. -Immediately notify Statutory OCE and Mining Superintendent-Verify that all mineworkers have evacuated the affected area -Verify all mineworkers

		communicated to all personnel working in or near the affected work areas. -Handover details of dump conditions to oncoming Mine Operations Supervisor for inclusion in pre-start meetings and TARP Condition -Implement wet weather controls -Increased frequency of inspection as appropriate to the hazard		have evacuated the affected area -Arrange for affected area to be cordoned off or barricaded in consultation with the Statutory OCE -Implement Risk Controls and Barricading as required -Act in line with the **Emergency Procedure**
Statutory Open Cut Examiner (OCE)	-Verify to MAC-PRD-STD-003 Design, Construction and Maintenance of Dump areas Standard -Conduct Statutory inspections as per Inspection Plan and compliance to plan checks -Verify Working Near Slopes and Crests Standard is adhered to	-Assess the area for barricading or cordoning off and arrange if required -Ensure hazard is effectively communicated to all personnel working in or near the affected work areas -Notify / verify Level 1 tip short alarm is activated through dispatch -Review if additional controls and a JHA is required -If required, consult with the mine supervisor and arrange for the affected area to be barricaded or cordoning off until JHA is developed. -Change access to reflect Level 1 TARP condition -Include TARP condition on HazRT report -Include TARP condition on OCE report -Notify oncoming OCE -Participate in and sign-off risk assessments as required -In consultation with Supervisor Production determine when conditions have sufficiently stabilised to change access back to Normal	-Immediately notify Mining Engineering Manager and Geotechnical Engineer -Ensure the affected area is adequately barricaded in consultation with the Supervisor Production and Geotechnical Engineer -Include TARP condition on OCE report -Change access to reflect Level 2 / Level 3 TARP condition -Include TARP condition on HazRT report -Participate in and sign-off risk assessments -Increased frequency of inspection as appropriate to the hazard and verify correct TARP level. -During inspections, verify correct TARP level and barricading is in place -Inspect mining areas after seismic event*	-Immediately notify Mining Engineering Manager and Geotechnical Engineer -Ensure the affected area is adequately barricaded in consultation with the Supervisor Production and Geotechnical Engineer -Change access to reflect Level 4 TARP condition -Include TARP condition on OCE report -Include TARP condition on HazRT -Participate in and sign-off risk assessments -Increased frequency of inspection as appropriate to the hazard and verify correct TARP level. -During inspections, verify correct TARP level and barricading is in place

		-Implement wet weather controls		-Act in line with the **Emergency Procedure** -Inspect mining areas after seismic event - in liaison with the Geotechnical Engineer and MEM
Mining Engineering Manager	-Conduct Statutory Inspections as per the **Inspection Plan**		-Notify GM and appropriate 3rd parties as required -Initiate IMT if required in line with the **Incident Management Plan** -Support event investigation if required (formal investigation if business financial threshold reached)	
Superintendents (reporting to Manager Production Overburden, Manager Production Coal and Manager Production Services	-Ensure persons under his control are trained and competent in appropriate level of Dump Control awareness -Verify excavation compliance to Design		-Review hazard assessments (JHA) ensuring Geotechnical Engineering recommendations are included and appropriate controls in place. -Confirmation of in field inspections of the work area -Communicate operational issues to Short Term Planning Superintendent.	-Notify Manager and other affected Superintendents of failure and restricted pit access -Review and sign-off on risk assessments (JHA) ensuring Geotechnical recommendations are included and controls in place. -Communicate operational issues to Short Term Planning Superintendent.
Manager(s) Production (includes Production Overburden, Production Coal and Production Services)	-Verify Dump Compliance to Design		-Support event investigation if required (formal investigation if business financial threshold reached)	-Ensure all relevant parties and Geotechnical Engineer are involved in recovery plan -Support event investigation if required (formal investigation if business safety threshold reached from control breach)
Manager Technical Services (this position is the Risk Owner for the Fall of Ground	-Ensure appropriate survey control is provided -Verify design process is adhered to		-Ensure event investigation is Initiated by appropriate manager if required, in line with **Event Investigation Protocol** (formal investigation if business financial threshold reached)	-Ensure event investigation is Initiated by appropriate manager if required, in line with **Event Investigation Protocol** (formal investigation if

material risk)				business financial threshold reached) -Review relevant areas of the **Slope Stability Management Plan** in line with the event.
Geotechnical Engineer / Geotechnical Function	-Ensure design criteria is provided to meet short and long term plans -Provide advice as required for design and execution	-Conduct regular follow-ups and confirm if actions or recommendations issued have been complied with. -Notify OCE of any hazards identified or reported that are not on the shift report -Assist OCE in setting TARP Level as required -Advise OCE in assessing requirements for monitoring device (e.g. radars) location, setup and interpretation of readings as required	-Complete geotechnical assessment and issue recommendations to reduce risk as required -Enter controls into HazRT -Ensure controls are issued as soon as practically possible -Verify the implementation of controls as soon as practically possible -Assess applicability of geotechnical monitoring -Advise Supervisor Production, Statutory OCE and area Superintendent of any changed conditions (including TARP level) as a result of specialist monitoring under supervision of Geotechnical Services -Review and sign-off hazard assessments	-Complete geotechnical assessment and issue recommendations to reduce risk as required -Enter controls into HazRT -Ensure controls are issued as soon as practically possible -Verify the implementation of controls as soon as practically possible -Assess applicability of geotechnical monitoring -Review and sign-off hazard assessments -Participate in/support any event investigations -Inspect mining areas after seismic event - in liaison with the OCE and MEM

*note these actions / responses only apply when a seismic event occurs.