DMRP Risk Register

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Active Rehabilitation Risk Rating			Controls for Passive Rehabilitation	Passive Rehabilitation Risk Rating			Controls for Post Closure	Performance Standards Post Closure	Post Closure Risk Rating			Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
											Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating			Consequence	Likelihood	Risk Rating			
1	Mine Void	Mine batters and floor	Fire	Exposed coal on lease	**Coal** fire due to an external running fire entering the mine onto coal surface(s), due to: - malicious & negligent attack (i.e. arson, fireworks) - electrical fault - lightning strike	- Vegetation / grazing land around mine boundary	- Air quality - Member of the public - External infrastructure - Flora & fauna - Surface water quality - Adjacent BESS facility	- Health impacts due to poor air quality / smoke - Degradation of covers / vegetation - Nuisance dust - Loss of amenity for a sustained period - Loss of services & infrastructure - Loss of habitat & biodiversity - Decline in water quality - Loss of agricultural / damage - Loss of / impact on historical and/or cultural heritage	**Engineering Controls:** - Fire suppression water system, wetting down areas of exposed coal (CC #0443) - noting only available until lake is filled - Filling the mine void with water to RL +45m - Capping exposed coal with clay (CC #0383) - Fire service system (CC#0206) - Fire breaks - BESS construction design and fire suppression controls **Administrative Controls:** - Prepare and Issue Site Fire Readiness Plan (CC #0094) - Fire & emergency response resource arrangements for management prior to escalation (internal & external) - Fire & emergency response training & competency **Supporting Documents:** - Vegetation Management Plan - Fire Risk Management Plan - Prepare and Issue Site Fire Readiness Plan (CC #0094) - Emergency Response Plan (CC #0616) - Bushfire Management Plan (AusNet fire management plan) - Municipal Fire Management Plan - FRV Preparedness Guideline Hazelwood Mine	Any Member of Public	4	1	Medium	**Engineering Controls:** - Management of rehabilitation to cover exposed coal (CC #0383) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Maintaining mine void with water to RL +45m within an acceptable range according to the design criteria - Fire breaks - Landform with provision of emergency access routes - BESS construction design and fire suppression controls **Administrative Controls:** - Prepare and Issue Site Fire Readiness Plan (CC #0094) - Aftercare inspection of capping - Fire & emergency response resource arrangements for management prior to escalation (appropriate to the changing land use) **Supporting Documents:** - Fire Risk Management Plan - Vegetation Management Plan - Prepare and Issue Site Fire Readiness Plan (CC #0094) - Emergency Response Plan (CC #0616) - FRV Preparedness Guideline Hazelwood Mine	2	1	Low	**Engineering Controls:** - Maintain mine void water level at RL+45m - Management of rehabilitation to cover exposed coal (CC #0383) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Landform with provision of emergency access routes - Fire Breaks **Administrative Controls:** - Aftercare inspection of capping (i.e. self sustaining) **Supporting Documents:** - Municipal Fire Management Plan	Maintenance, integrity & design - capping Emergency Access Routes Fire Breaks Maintain Pit Void Water Level	2	1	Low	**Active Rehabilitation:** During active rehabilitation, the workshop team believe that if a coal fire would to occur, this could cause public amenity issued with the smoke generated. However, with the current controls in place during active rehabilitation, it is unlikely for such an event to occur. **Passive Rehabilitation:** The amount of exposed coal is covered and/or submerged in passive rehabilitation. In the unlikely event that a fire event was to occur, the team believes that the amount of smoke generated / time of exposure will be significantly reduced. The Vegetation Management Plan ensures that it does not compromise capping on coal. **Post Closure:** During the post closure phase, exposed coal is covered and/or submerged with the mine void water levels maintained, it is anticipated that the risk of a coal fire will be low. As long as the water level is maintained, the consequence remains unchanged from the passive stage and likelihood might be slighlty reduced but unable to change the rating further than rare.	The level of control and monitoring will reduce, however the likelihood of an external influence will still remain present (with future land use). No safety impacts - as no public access to coal areas during rehabilitation phase Note: 1. Instruction from FRV on level of equipment available on site is relative to the risk (Ref: FRV Preparedness Guideline Hazelwood Mine) 2. Fire risk modelling assessments by independent experts will be conducted in the next phase of risk assessments.	Risk is reduced SFAIRP.
2	Mine Void	Mine batters and floor	Fire	Exposed coal on lease	**Coal** fire due to an external ember attack, due to: - malicious & negligent attack (i.e. arson, fireworks) - electrical fault - lightning strike	- Airborne particulates	- Air quality - Member of the public - External infrastructure - Flora & fauna - Surface water quality - Adjacent BESS facility	- Health impacts due to poor air quality / smoke - Degradation of covers / vegetation - Nuisance dust - Loss of amenity for a sustained period - Loss of services & infrastructure - Loss of habitat & biodiversity - Decline in water quality - Loss of agricultural / damage - Loss of / impact on historical and/or cultural heritage	**Engineering Controls:** - Fire suppression water system, wetting down areas of exposed coal (CC #0443) - noting only available until lake is filled - Filling the mine void with water to RL +45m - Capping exposed coal with clay (CC #0383) - Fire service system (CC#0206) - BESS construction design and fire suppression controls **Administrative Controls:** - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Fire & emergency response resource arrangements for management prior to escalation (internal & external) - Fire & emergency response training & competency **Supporting Documents:** - Vegetation Management Plan - Fire Risk Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Emergency Response Plan (CC #0616) - Bushfire Management Plan (AusNet fire management plan) - Municipal Fire Management Plan	Any Member of Public	4	2	High	**Engineering Controls:** - Management of rehabilitation to cover exposed coal (CC #0383) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Maintaining mine void with water to RL +45m within an acceptable range according to the design criteria - Landform with provision of emergency access routes - BESS construction design and fire suppression controls **Administrative Controls:** - Aftercare inspection of capping - Fire & emergency response resource arrangements for management prior to escalation (appropriate to the changing land use) **Supporting Documents:** - Fire Risk Management Plan - Vegetation Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Emergency Response Plan (CC #0616) - FRV Preparedness Guideline Hazelwood Mine	2	1	Low	**Engineering Controls:** - Maintain mine void water level at RL+45m - Management of rehabilitation to cover exposed coal (CC #0383) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Landform with provision of emergency access routes - Fire Breaks **Administrative Controls:** - Aftercare inspection of capping (i.e. self sustaining) **Supporting Documents:** - Municipal Fire Management Plan	Maintenance, integrity & design - capping Emergency Access Routes Fire Breaks Maintain Pit Void Water Level	2	1	Low	**Active Rehabilitation:** If there are a few places that catch fire at once, there is more smoke generated. The consequence is the same as a running fire (i.e. Public amenity issues). The likelihood is unlikely because it is conceivable that a member of the public might have more exposure from a spot fire compared to a running fire. **Passive Rehabilitation:** Minor consequence as it is credible that smoke is generated over a day or two from embers. Likelihood is Rare for both ember attack & running fire. **Post Closure:** There shouldn't be any exposed coal as this should be capped or submerged with the pit water level. As long as the water level is maintained, the consequence remains unchanged from the passive stage and likelihood might be slighlty reduced but unable to change the rating further than rare.	The level of control and monitoring will reduce, however the likelihood of an external influence will still remain present (with future land use). No safety impacts - as no public access to coal areas during rehabilitation phase Note: 1. Instruction from FRV on level of equipment available on site is relative to the risk (Ref: FRV Preparedness Guideline Hazelwood Mine) 2. Fire risk modelling assessments by independent experts will be conducted in the next phase of risk assessments.	Risk is reduced SFAIRP.
3	Mine Surrounds	Remaining land incl. conservation areas	Fire	Vegetation	**Vegetation** fire due to: - lightning strike - electrical faults (e.g. BESS) - human activities - external running fire entering - external ember attack fire	- Smoke dispersion offsite - Particulates in runoff - Air emissions (particulate matter) - Running fire leaving site	- Air quality - Member of the public - External infrastructure - Flora & fauna - Surface water quality - Cultural heritage - Adjacent BESS facility	- Health impacts due to poor air quality / smoke - Safety impacts that results in hospitalisation from exposure to fire - Degradation of covers / vegetation - Nuisance dust - Loss of amenity for a sustained period - Loss of services & infrastructure - Loss of habitat & biodiversity - Decline in water quality - Loss of agricultural / damage - Loss of / impact on historical and/or cultural heritage	**Engineering Controls:** - Filling the mine void with water to RL +45m - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Landform / vegetation design - Fire suppression water systems, wetting down areas (available until lake is filled) (CC #0206) - Fire breaks - BESS construction design and fire suppression controls **Administrative Controls:** - Fire & emergency response resource arrangements for management prior to escalation (internal & external) - Fire & emergency response training & competency **Supporting Documents:** - Vegetation Management Plan - Fire Risk Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Hot work permit procedure - 2024 Engie Hazelwood Mine Fire Mitigation Report (FRC) - Municipal Fire Management Plan - FRV Preparedness Guideline Hazelwood Mine	Any Member of Public	4	1	Medium	**Engineering Controls:** - Filling the mine void with water level to RL +45m - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Fire breaks - Landform with provision of emergency access routes - BESS construction design and fire suppression controls **Administrative Controls:** - Fire & emergency response resource arrangements for management prior to escalation (internal & external) - Fire & emergency response training & competency **Supporting Documents:** - Vegetation Management Plan - Fire Risk Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Hot work permit procedure - 2024 Engie Hazelwood Mine Fire Mitigation Report (FRC) - Municipal Fire Management Plan - FRV Preparedness Guideline Hazelwood Mine	4	1	Medium	**Engineering Controls:** - Fire breaks - Landform with provision of emergency access routes - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) **Supporting Documents:** - Municipal Fire Management Plan	Emergency Access Routes Fire Breaks	4	1	Medium	**Active Rehabilitation:** The team believes that the consequence is Major due to previous bushfire events resulting is hospitalisation of a member of the public if exposed to the fire. However it is a rare event and the consequence from a vegetation fire from the mine impacting members of public hasn't occurred in the Latrobe Valley region. **Passive Rehabilitation:** During passive rehabilitation, there will be no fire suppression systems on site where buildings have been removed. There will be mobile fire suppression systems available. The team believes that the consequence and likelihood remain the same (noting the likelihood may reduce slightly but cannot be further reduced using the risk matrix) **Post Closure:** For post closure, there would be an increase in people in the area and therefore the potential for fires started by people increases but also the receptors potential increases as more members of the public may be exposed. Overall the team believes that the consequence and likelihood remain the same as passive. There may be consideration to restrict access on a fire danger day.	The level of control and monitoring will reduce, however the likelihood of an external influence will still remain present (with future land use). Risk of fire from vegetation is similar to the surrounding vegetation areas. Likelihood for post closure may increase due to public access if it is permitted. However, remains within the current likelihood probably of an event occurring. Note: 1. Instruction from FRV on level of equipment available on site is relative to the risk (Ref: FRV Preparedness Guideline Hazelwood Mine) 2. Fire risk modelling assessments by independent experts will be conducted in the next phase of risk assessments.	Risk is reduced SFAIRP.
4	Mine Surrounds	External overburden dumps	Fire	Vegetation	**Vegetation** fire due to: - spontaneous combustion - hot spots	- Smoke dispersion offsite - Particulates in runoff - Air Emissions (particulate matter) - Running fire	- Air quality - Member of the public - External infrastructure - Flora & fauna - Surface water quality	- Health impacts due to poor air quality / smoke - Degradation of covers / vegetation - Nuisance dust - Loss of amenity for a sustained period - Loss of services & infrastructure - Loss of habitat & biodiversity - Decline in water quality - Loss of agricultural / damage - Loss of / impact on historical and/or cultural heritage	**Engineering Controls:** - Filling the mine void with water to RL +45m - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Landform / vegetation design - Fire suppression water system (available until lake is filled) (CC #0206) **Administrative Controls:** - Management of areas of interest incl. spon com, fire - Fire & emergency response resource arrangements for management prior to escalation - Fire & emergency response training & competency - Use of planning scheme to restrict activities (e.g. prevent inappropriate plantation) **Supporting Documents:** - Vegetation Management Plan - Fire Risk Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Emergency Response Plan (CC #0616) - Hot work permit procedure - FRV Preparedness Guideline Hazelwood Mine	Any Member of Public	2	2	Low	**Engineering Controls:** - Maintaining mine void with water to RL +45m within an acceptable range according to the design criteria - Fire breaks - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) **Administrative Controls:** - Maintenance of landform / vegetation design - Vegetation management - Fire & emergency response resource arrangements for management prior to escalation (appropriate to the changing land use) - Use of planning scheme to restrict activities (e.g. prevent inappropriate plantation, public access contained to designated areas) **Supporting Documents:** - Fire Risk Management Plan - Vegetation Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Emergency Response Plan (CC #0616) - FRV Preparedness Guideline Hazelwood Mine	2	1	Low	**Engineering Controls:** - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Maintain mine void water level - Fire breaks **Administrative Controls:** - Ongoing vegetation management (details to be confirmed) - Completion criteria agreed with MLRA (e.g. vegetation planning, restricted use)	Fire Breaks Maintain Pit Void Water Level	2	1	Low	**Active Rehabilitation:** The team believes that the consequence is Minor and the likelihood is Unlikely. **Passive Rehabilitation:** During passive rehabilitation, there will be no fire suppression systems on site where buildings have been removed. There will be mobile fire suppression systems available. The team believes that the consequence remain the same. The likelihood of the event will reduce to Rare as coal is capped / submerged, with no exposed surfaces and water level maintained at the pit lake. **Post Closure:** For post closure, there may be increase in vegetation. The team believes that the consequence and likelihood remain the same, with the pit lake filled and water level maintained.	The level of control and monitoring will reduce, however the likelihood of an external influence will still remain present (with future land use). Risk of fire from vegetation is similar to the surrounding vegetation areas. Likelihood for post closure may increase due to public access if it is permitted. However, remains within the current likelihood probably of an event occurring. Note: 1. Instruction from FRV on level of equipment available on site is relative to the risk (Ref: FRV Preparedness Guideline Hazelwood Mine) 2. Fire risk modelling assessments by independent experts will be conducted in the next phase of risk assessments.	Risk is reduced SFAIRP.
5	Mine Void	Mine batters and floor	Fire	Exposed coal on lease	**Coal** fire caused by internal fire due to: - lightning strike - electrical faults (e.g. BESS) - human activities (e.g. arson) - spontaneous combustion - hot works / vehicle / mobile plant on site - flammable material storage on site - building fires (e.g. admin, workshops)	- Airborne particulates	- Air quality - Member of the public - External infrastructure - Flora & fauna - Surface water quality	- Health impacts due to poor air quality / smoke - Degradation of covers due to erosion (batters and covers) - Impact to rehabilitated land - Loss of public amenity for a sustained period - Loss of services & infrastructure (e.g. substation) - Decline in water quality	**Engineering Controls:** - Filling the mine void with water to RL +45m - Capping exposed coal with clay (CC #0383) - Fire service system (CC#0206) - Fire Services – Fire protection of exposed coal and mechanical plant (CC #0443) - Site security incl. fencing - BESS construction design and fire suppression controls **Administrative Controls:** - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Inspection and management for areas of interest including hot spots, thermal drones **Supporting Documents:** - Fire Risk Management Plan - Vegetation Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Hot work procedure - Emergency Response Plan (CC #0616) - FRV Preparedness Guideline Hazelwood Mine	Any Member of Public	4	1	Medium	**Engineering Controls:** - Maintaining the mine void with water to RL +45m - Management of rehabilitation to cover exposed coal (CC #0383) - Site security incl. fencing - Fire Services – Fire protection of exposed coal and mechanical plant (CC #0443) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - BESS construction design and fire suppression controls **Administrative Controls:** - Fire reduction & fuel removal completed annually prior to fire season (CC #0094) - Inspection and management for areas of interest including hot spots, thermal drones **Supporting Documents:** - Fire Risk Management Plan - Vegetation Management Plan - Fire Instructions & Fire Readiness Planning Guidelines (CC #0094) - Emergency Response Plan (CC #0616) - FRV Preparedness Guideline Hazelwood Mine	2	1	Low	**Engineering Controls:** - Maintain mine void water level at RL+45m - Management of rehabilitation to cover exposed coal (CC #0383) - Vegetation Management / Grass Cutting / Firebreaks (CC#0206) - Landform with provision of emergency access routes - Fire breaks **Administrative Controls:** - Aftercare inspection of capping (i.e. self sustaining)	Maintenance, integrity & design - capping Emergency Access Routes Fire Breaks Maintain Pit Void Water Level	2	1	Low	**Active Rehabilitation:** A coal fire that starts internally would typically mean there are more people around during the active phase to react and prevent the fire escalating. The workshop team didn't conceive a safety impact driving this risk, instead any potential smoke generated would result in a Major public amenity issue. This is due to people being stuck inside from the amount of smoke being generated. The likelihood of this consequence occurring is rare due to the emergency response controls during active rehab. **Passive Rehabilitation:** in the very unlikely event that a fire event was to occur, the team believe that the amount of smoke generated / time of exposure will be significantly reduced. The Vegetation Management Plan ensures that it does not compromise capping on coal. There is no exposed coal during the passive rehabilitation phase as it should be capped or submerged under the pit lake level. The likelihood will reduce slightly but cannot be demonstrated within the restrictions of the risk matrix. **Post Closure:** During the post closure phase, exposed coal is covered and/or submerged with the mine void water levels maintained, it is anticipated that the risk of a coal fire will be low. Consequence is the same as passive rehab and likelihood may be reduced slightly but within the rare category.	The level of control and monitoring will reduce, however the likelihood of an external influence will still remain present (with future land use). No safety impacts - as no public access to coal areas during rehabilitation phase Note: 1. Instruction from FRV on level of equipment available on site is relative to the risk (Ref: FRV Preparedness Guideline Hazelwood Mine) 2. Fire risk modelling assessments by independent experts will be conducted in the next phase of risk assessments.	Risk is reduced SFAIRP.
6	All	All	Security	Unauthorised access	Unauthorised access of member of public into site	- Interaction with rehabilitation works (e.g. vehicle interaction, construction works, access to pit lake)	Member of public	- Injury and/or fatality to public accessing site (e.g. drowning, electrocution)	**Engineering Controls:** - Site security, signage and fencing to limit public access - Security cameras / patrols - Site access control (CC # 0648) **Supporting Documents:** - Emergency Response Plan (CC #0616)	Any Member of Public	5	1	High	**Engineering Controls:** - Site security, signage and fencing to limit public access - Security cameras / patrols - Site access control (CC # 0648) - Final landform design (e.g. batters) **Supporting Documents:** - Emergency Response Plan (CC #0616)	5	1	High	**Engineering Controls:** - Use of exclusion zones through agricultural land use - Fencing - Beaching & public access safe zones - Removal of civil infrastructure in proximity to pit lakes - Final landform design (e.g. batters)	Emergency Access Routes Final Landform Design	5	1	High	**Active Rehabilitation:** The team believes that the consequence is Critical as there could be a fatality of a member of the public. The team believes that the likelihood is Rare as there have been people onsite previously, however did not result in a fatality. **Passive Rehabilitation:** The team believes that the risk is reduced during the passive rehabilitation phase as there are no steep batters or machinery available to interact with the hazards. However, it was noted the potential for drowning remains during passive rehabilitation and therefore a critical consequence is credible. Likelihood is reduced but cannot be shown on this risk matrix as it is already at rare. **Post Closure:** Final landform will be safe and reduced to SFAIRP. The landform will not be any less safe compared to other public water bodies - there could be potential additional standard safety control measures provided by the final	Note: The workers for managing vegetation or undertaking other maintenance / service activities in post closure phase should be covered under WHS.	Risk is reduced SFAIRP.
7	Mine Void	Mine void lake	Security	Access to water body	Authorised access in crest (e.g. in proximity to pit lake)	- Public and end users access - Use of the pit lake and surrounding land	- Member of the public - end users and wildlife - Leasee	- Fatality or injury of member/s of public / leasee due to drowning due authorised or unauthorised access to the water - Loss of livestock and wildlife	**Engineering Controls:** - Fenced and secured site to prevent public access during rehabilitation phase - Site access control (CC #0648) **Administrative Controls:** - 24hr site security - Working near or on water procedure	Any Member of Public	5	1	High	**Engineering Controls:** - Fenced and secured site to prevent public access - Landform design - Maintain water level to RL +45m - Site access control (CC #0648) **Administrative Controls:** - Signage - Working near or on water procedure	5	1	High	**Engineering Controls:** - Exclusion zones for access and working near water - Design of slopes and bench levels at final lake level to suit land use - Construction of beached areas to allow safe access to lake - Use of wave mitigation techniques e.g. floating booms, coir matting **Administrative Controls:** - Signage and direction to safer areas - Maintenance of beached areas to allow safe access to lake - Authorized access to specific areas	Emergency Access Routes Final Landform Design	5	1	High	**Active Rehabilitation:** There is the potential for entry into the water from unauthorised access during void filling, however the team noted that in this event, people are able to get out. Therefore, the team believes that the consequence is Critical as there could be a fatality and the likelihood is Rare due to the very low likelihood of this event occurring with the controls in place. **Passive Rehabilitation:** During the passive phase, the consequence remains unchanged as it is still foreseeable for a member of public to accidentally drown. The likelihood will be reduced as the site is fenced and secured. However it cannot be shown on this risk matrix as it is already at rare. **Post Closure:** Final landform will be safe and reduced to SFAIRP. The landform will not be any less safe compared to other public water bodies - there could be potential additional standard safety control measures provided by the final land owner (e.g. buoys). Likelihood remains as rare.	Public use of the facilities (e.g. boating) has not been considered as part of this risk and not assessed.	Risk is reduced SFAIRP.

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Consequence	Likelihood	Risk Rating	Controls for Passive Rehabilitation	Consequence	Likelihood	Risk Rating	Controls for Post Closure	Performance Standards Post Closure	Consequence	Likelihood	Risk Rating	Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
8	All	All	Security	Unauthorised access	Malicious acts or arson on site	- Points of access into site	- Private / public infrastructure - Flora & fauna - Pit lake - Surface water - Groundwater	- Damage to critical infrastructure on site (e.g. pump bores, fire protection systems, lake levels, substation) which leads to environmental impacts - Escalation of a fire event due to arson - Damage to telemetry (i.e. citech) that controls critical infrastructure - Contamination of pit lake water quality - Environmental impacts	**Engineering Controls:** - Site security, signage and fencing to limit public access - Security cameras / patrols - Alarms and SCADA system responding to faults - Site access control (CC # 0648) **Supporting Documents:** - Emergency Response Plan (CC #0616)	The Environment	2	1	Low	**Engineering Controls:** - Site security, signage and fencing to limit public access - Security cameras / patrols - Alarms and SCADA system responding to faults - Site access control (CC # 0648) **Supporting Documents:** - Emergency Response Plan (CC #0616)	2	1	Low	**Engineering Controls:** - Fencing of selected areas - Key infrastructure is inaccessible or secured	Final Landform Design	2	1	Low	**Active Rehabilitation:** The workshop team believed the worst case credible scenario would be a member of the public dumping contamination into the pit void and / or associated waterways. However due to the large scale of the pit void it is assumed that there would be minor contamination and not enough to exceed EPA guidelines. Likelihood is Rare due to limited access. **Passive Rehabilitation:** There are less critical systems on site for members of the public to tamper with and there is still people onsite for passive monitoring. Highest risk is contamination to water and remains the same consequence as active rehab. Likelihood remains rare. **Post Closure:** There is less infrastructure to be damaged but there is no more security or patrols for stopping malicious acts being done. Overall, the consequence and likelihood remains the same as Minor and Rare.		Risk is reduced SFAIRP.
9	Mine Void	Mine batters and floor	Geotechnical	Seismic events	Geotechnical instability of insitu overburden and/or coal due to extreme seismic events Note: This excludes overburden dump (Refer to risk #14).	- Batter movement	- Member of the public - Third party assets - Surface drainage - Cultural heritage - Vegetation - MRD - Eel Hole Creek - Loss of infrastructure - MMD	- Fatalities or injuries to member of public off licence due to deformation of freeway - Damage to local and regional infrastructure - Loss or damage to third party property / infrastructure	**Engineering Controls:** - Seismic analysis informs design checked maximum geometry and volume of material confirming assessment & impacts (Landform design CC#00119) - Redesign and maintenance of Morwell Main Drain (MMD), includes lining (CC #0576) - Filling the mine / adding weight to a trigger level as per the TARPs **Administrative Controls:** - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) **Supporting Documents:** - Revised MMD O&M manual with MMD specifications - 2019, 2020 and 2024 Batter Stability Assessment	Any Member of Public	5	2	High	**Engineering Controls:** - Maintain Lake Level RL+45m AHD (New CC#123) - Design of pit lake **Administrative Controls:** - Use of agreed planning tools to manage activities for appropriate land use - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) **Supporting Documents:** - Post closure liability assessment	2	1	Low	**Engineering Controls:** - Full pit void & maintenance of water level **Administrative Controls:** - Use of agreed planning tools to manage activities for appropriate land use	Maintain Pit Void Water Level	2	1	Low	**Active Rehabilitation:** The team believes that the consequences is High and the likelihood is Unlikely. **Passive Rehabilitation:** The team believes that the consequence reduces signficantly to Minor as there is no restricted public access. Block sliding is not anticipated to occur when mine void is filled to RL +45m. The sensitivity assessments demonstrate a full pit lake with higher factor of safety. The team believes that the likelihood reduces to Rare. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase.		Risk is reduced SFAIRP.
10	Mine Void	Mine void lake	Geotechnical	Ground water	Geotechnical instability of insitu overburden and/or coal due to elevated ground water levels can be caused by: - Extreme rainfall event / uncontrolled surface water connections (incl. failure of engineered inlet structure) - Poor surface water management - Ground water levels in coal - Critical pool levels Note: This excludes overburden dump (Refer to risk #14).	- Batter movement (horizontal & vertical)	- Member of the public - Third party assets - Surface drainage - Cultural heritage - Vegetation - MRD - Eel Hole Creek - Loss of infrastructure - MMD	- Fatalities or injuries to member of public off licence due to deformation of freeway - Damage to local and regional infrastructure - Loss or damage to third party property / infrastructure	**Engineering Controls:** - Stability & movement analysis covering critical joint water analysis - Surcharges - Horizontal drains (CC #0231) - Surface drainage - Redesign and maintenance of Morwell Main Drain (MMD), includes lining (CC #0576) - Filling the mine / adding weight to a trigger level as per the TARPs - Assessment of reference rate levels (e.g. rate of fill at critical pool levels, horizontal drains, additional surcharge) **Administrative Controls:** - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) **Supporting Documents:** - Revised MMD O&M manual with MMD specifications - 2019, 2020 and 2024 Batter Stability Assessment - GCMP incl. DMR annual modelling update & TARPs	Any Member of Public	5	2	High	**Engineering Controls:** - Maintain Lake Level RL+45m AHD (New CC#123) - Design of pit lake - Surface drainage (as part of landform design) - Outlet spillway to Morwell river - Levees **Administrative Controls:** - Use of agreed planning tools to manage activities for appropriate land use - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) **Supporting Documents:** - Post closure liability assessment	2	1	Low	**Engineering Controls:** - Full pit void & maintenance of water level - Levees **Administrative Controls:** - Use of agreed planning tools to manage activities for appropriate land use	Maintain Pit Void Water Level Levees	2	1	Low	**Active Rehabilitation:** The team believes that the consequences is High and the likelihood is Unlikely. **Passive Rehabilitation:** The team believes that the consequence reduces signficantly to Minor as there is no restricted public access. Block sliding is not anticipated to occur when mine void is filled to RL +45m. The sensitivity assessments demonstrate a full pit lake with higher factor of safety. The team believes that the likelihood reduces to Rare. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase.		Risk is reduced SFAIRP.
11	All	All	Geotechnical	Erosion	Erosion leading to degradation of rehabilitated batters due to unsuitable selection of materials and design / construction Note: This risk includes erosion of levees in proximity to void.	- Loss of material - Runoff - Sinkholes, tunnel erosion, major gullying - Large rainfall / flood event - Inadequate construction / limited compaction	- Pit lake water quality - Natural water courses - Flora & fauna - Slopes & drainage infrastructure - Morwell river - Levees & embankment	- Sediment in pit lake impacts flora & fauna - Infrastructure impact (incl. levees, surcharges, drainage) - Batter failure - Impacts to surface water quality - Impacts to pit lake water quality - Loss of integrity of fire cap over exposed coal	**Engineering Controls:** - Revegetation of batters - Erosion assessments & design - Drainage / cover design & monitoring - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #119) **Administrative Controls:** - Project execution QA/QC for construction - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Vegetation Management Plan - Construction Environment Management Plan (CEMP) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Project Execution Plan & Specifications - Drainage design strategy informs drainage design	Land, Property and Infrastructure	1	3	Low	**Engineering Controls:** - Completion of sitewide rehabilitation and drainage works - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #119) **Administrative Controls:** - Inspection & maintenance of erosion - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Vegetation Management Plan (to incl. maintenance of erosion) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245)	1	3	Low	**Administrative Controls:** - Maintenance of batters and beached areas	Erosion Management	1	2	Low	**Active Rehabilitation:** The team believes that the consequences is Insignificant as there is no public access during active phase. It is assumed that the site will be maintaining surcharges. This risk has an infrastructure impact. The team beleives that the likelihood is Possible. **Passive Rehabilitation:** The team believes that the consequence remains the same as there are no impacts to surcharges. The team believes that the likelihood also remains the same. **Post Closure:** The team believes that the consequence will decrease however as it is already the lowest category, it cannot be reduced further on the matrix.. The monitoring and maintenance plan will rectify any issues or deficiencies to ensure it meets the completion criteria, therefore the team beleives that the likelihood will reduce to Unlikely. Vegetation will be established as a self-sustained cover system.		Risk is reduced SFAIRP.
12	Mine Void	Mine batters and floor	Geotechnical	Erosion	Erosion at shoreline due to: - Wave action - Fluctuating pit lake water levels	- Loss of material - Undercutting or damage to beaching	- Pit lake - Surface water - Flora & fauna - Surcharges - Coal capping - Beaching (shoreline protection & public access)	- Loss of public amenity - Loss of safe access & egress - Sediment in pit lake impacts flora & fauna - Damage to rehabilitated slopes - Damage to beaching & shoreline protection zone - Impacts to surface water quality - Impacts to pit lake water quality - Loss of integrity of fire cap over exposed coal	**Engineering Controls:** - Floating booms preventing wave erosion - Shoreline protection zone - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) - Surcharges design incl. erosion mitigation measures **Administrative Controls:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Construction Environment Management Plan (CEMP) - Landform evolution modelling (Landloch & Alluvium) - Foreshore Protection for Erosion Hazelwood Pit Lake Protection & Functional Design (Alluvium) - Hazelwood Mine Batter Capping Material Sampling and Assessment Procedure (Landloch)	Land, Property and Infrastructure	1	3	Low	**Engineering Controls:** - Maintain Lake Level RL+45m AHD (New CC#123) - Design, construction and maintenance of beaching zone - Floating booms preventing wave erosion and other wave mitigation options - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #119) **Administrative Controls:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:**	1	3	Low	**Administrative Controls:** - Maintenance of batters and beached areas	Erosion Management	1	2	Low	**Active Rehabilitation:** The team believes that the consequences is Insignificant as there is no public access during active phase. It is assumed that the site will be maintaining surcharges. This risk has an infrastructure impact. The team beleives that the likelihood is Possible. **Passive Rehabilitation:** The team believes that the consequence remains the same as there are no impacts to surcharges. The team believes that the likelihood also remains the same. **Post Closure:** The team believes that the consequence will decrease however as it is already the lowest category, it cannot be reduced further on the matrix.. The monitoring and maintenance plan will rectify any issues or deficiencies to ensure it meets the completion criteria, therefore the team beleives that the likelihood will reduce to Unlikely. Vegetation will be established as a self-sustained cover system.		Risk is reduced SFAIRP.
13	Mine Surrounds	All	Geotechnical	Erosion	Erosion due to: - Overgrazing / over stocking - Burrowing & grazing animals e.g. rabbits, deer, wombats - Extreme weather events (e.g. wind, rain) - Inappropriate and/or loss of vegetation	- Loss of topsoil - Loss of capping - Sedimentation or nutrient transfer - Public and end users access - Runoff - Airborne particulates	- Pit lake - Surface water - Overburden dump - Flora & fauna - Public access - Local infrastructure (e.g. roads & drainage) - Public amenity	- Loss of public amenity (incl. dust impacts) - Loss of safe access & egress - Sediment in pit lake impacts flora & fauna - Local infrastructure impact - Impacts to surface water quality - Impacts to pit lake water quality - Loss of integrity of fire cap over exposed coal - Loss of vegetation - Loss of overburden dump	**Engineering Controls:** - Revegetation of batters - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) **Administrative Controls:** - GCMP including all geotechnical Domains, inspections & TARPs. - Pest & weed control - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Vegetation Management Plan - Environmental Management Plan - Land management and maintenance plans (e.g. lease / end users restrictions)	Land, Property and Infrastructure	1	3	Low	**Engineering Controls:** - Completion of sitewide rehabilitation and drainage works - Established vegetation - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) **Administrative Controls:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) - Pest & weed control - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Vegetation Management Plan - Land management and maintenance plans (e.g. lease / end users restrictions) - Updated leases	1	3	Low	**Administrative Controls:** - Maintenance of batters and beached areas **Supporting Documents:** - Land management and maintenance plans (e.g. lease / end users restrictions) - Post closure monitoring & maintenance plan	Erosion Management	1	2	Low	**Active Rehabilitation:** The team believes that the consequences is Insignificant as there is no public access during active phase. It is assumed that the site will be maintaining surcharges. This risk has an infrastructure impact. The team beleives that the likelihood is Possible. **Passive Rehabilitation:** The team believes that the consequence remains the same as there are no impacts to surcharges. The team believes that the likelihood also remains the same. **Post Closure:** The team believes that the consequence will decrease however as it is already the lowest category, it cannot be reduced further on the matrix.. The monitoring and maintenance plan will rectify any issues or deficiencies to ensure it meets the completion criteria, therefore the team beleives that the likelihood will reduce to Unlikely. Vegetation will be established as a self-sustained cover system.		Risk is reduced SFAIRP.
14	Mine Surrounds	External overburden dumps	Geotechnical	Geotechnical instability	Slope failure of overburden dump due to: - Elevated ground water pressures - Seismic event - Weather event Note: This excludes the Western Overburden Dump as the risk associated is negligible.	- Surface water runoff - Elevated ground water	- Member of the public - Third party property (e.g. end users, roads) - Bennettes Creek - Wet lands adjacent to License Boundary - Flora & fauna	- Vehicle incident leading to public injury (Monash Way) - Loss of infrastructure use - Damage to third party assets - Impacts to surface water quality and local waterways	**Engineering Controls:** - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) - Perimeter barriers - Capping & surface drainage **Administrative Controls:** - Geotechnical inspections & movement monitoring - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Land maintenance and management plans (vegetation, leases, fire etc.) - ERM Water Management Strategy - Landform evolution modelling (Landloch & Alluvium)	Land, Property and Infrastructure	2	1	Low	**Engineering Controls:** - Perimeter barriers - Capping & surface drainage - Consolidation over time which will strengthen - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) **Administrative Controls:** - Geotechnical inspections & movement monitoring - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Land maintenance and management plans (vegetation, leases, fire etc.) - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245)	1	1	Low	**Engineering Controls:** - Exposed coal is covered (capped) and/or submerged (CC #0383) - Design of slopes and bench levels at final lake level to suit land use **Administrative Controls:** - Aftercare inspection of capping (i.e. self sustaining)	Maintenance, integrity & design - capping Final Landform Design	1	1	Low	**Active Rehabilitation:** The overburden dump slope is historically stable and has not moved for the last 40 years. However, there is a potential for seepage areas and high water tables if it does not consolidate over time. In the active rehabilitation phase, the site is fenced off with no public access. The workshop team believes that should this event occur, it would only result in injuries of people during a vehicle collision incident. Therefore this is rated as a Minor consequence. The likelihood of this occurring is Rare. **Passive Rehabilitation:** Based on the current controls in place, it is anticipated that the slope of the overburden dump will consolidate over time, and this will reduce the severity of a slope failure event resulting in injuries. As such, the consequence level will reduce to Insignificant, however the likelihood of the event remains as Rare. **Post Closure:** The workshop team believes that the consequence will remain as insignificant and likelihood remains as Rare in the post closure phase.		Risk is reduced SFAIRP.

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Consequence	Likelihood	Risk Rating	Controls for Passive Rehabilitation	Consequence	Likelihood	Risk Rating	Controls for Post Closure	Performance Standards Post Closure	Consequence	Likelihood	Risk Rating	Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
15	Mine Void	Landfills and disposal areas	Geotechnical	Contamination (e.g. ash)	Ash comes in contact with water due to an uncontrolled event relating to the HARA and the pit lake	- Embankment (HARE) failure - Erosion of embankment or proposed cap	- Shallow and M1 aquifer - Pit lake	- Large release of ash to pit lake Refer to Risk #35 for environmental impacts.	Engineering Controls: - Geotechnical Stability Assessments confirmed design adequacy - Lowering of crest to improve HARE stability - Floating booms preventing wave erosion and other wave mitigation controls - Design for inundation (minimise risk of collapse) **Administrative Controls:** - Monitoring and maintenance of HARA - Monitoring movement of embankment - Bathometric surveys (displacement or movement) - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Mine Void Audit - Stability Assessment Reports - Landfill Management Plan (EPA requirement) - HARA rehabilitation strategy including wave management plan - RGS modelling report shows negligible impacts from ash on pit lake - Solute modelling report shows negligible impacts from ash on pit lake	The Environment	1	1	Low	**Administrative Controls:** - Water quality monitoring - Bathometric surveys (displacement or movement) - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245)	1	1	Low	**Engineering Controls:** - Design of slopes and bench levels at final lake level to suit land use	Final Landform Design	1	1	Low	**Active Rehabilitation:** Based on the technical study completed by RGS, the findings shows negligible impacts from ash on the pit lake and HARA. Hence, the workshop team believes that the consequences is Insignificant and the likelihood is Rare. **Passive Rehabilitation:** The team believes that the risk remains the same during the passive rehabilitation phase. The team noted that this would be for a relatively short period of time in comparison to amount of time for control over activities. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase.		Risk is reduced SFAIRP.
16	Mine Void	Mine batters and floor	Geotechnical	Water infiltration / water ingress	Infiltration of water through Morwell Main Drain (MMD)	- Lining failure - Low flow pipe leakage - Pit connections - Ground movement	- Member of public - Local third party infrastructure (e.g. motorway, township, transmission towers) - Private property - Morwell wetlands - Coal batters - ENGIE assets (pump bores etc.)	- Damage to private properties - Adverse impacts to environmental uses of Morwell wetlands (flora or fauna) - Impact to local freeways, transmission lines, private properties - Coal block movement / ground movement (Refer to Risk #10)	**Engineering Controls:** - Redesign and maintenance of Morwell Main Drain (MMD), includes lining (CC #0576) - Sensitivity analysis on hydraulic connectivity between MMD and adjoining batters **Administrative Controls:** - Periodic inspections of MMD (CC #0576) - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) - Engage with future landowners - Latrobe Council **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Revised MMD O&M manual with MMD specifications - 2019, 2020 and 2024 Batter Stability Assessment	Land, Property and Infrastructure	5	1	High	**Administrative Controls:** - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) - Revised MMD O&M manual with MMD specifications	2	1	Low	**Engineering Controls:** - Operation and inspection of MMD channel	Maintenance, integrity & design – MMD	2	1	Low	**Active Rehabilitation:** Potential to damage infrastructure with expected cost impacts exceeding $10mil and will be weeks or longer of potential interruption. This equates to a Critical consequence. However the likelihood is Rare due to past incident history indicating potential interruptions greater than weeks is less than 5%. **Passive Rehabilitation:** Less damage / extent of damage reduced with the controls in place, equating to infrastructure consequences equal to Minor. Likelihood is still rare. **Post Closure:** Landform is in a stable state at lake level +45m. The workshop team do not foresee major infrastructure impacts. Risk rating same as passive rehab.	This risk assesses the environmental impacts due to the MMD failure only. The implications of batter instability is assessed in a separate risk item (Refer Risk #10).	Risk is reduced SFAIRP.
17	All	All	Geotechnical	Ground movement	Unplanned or differential ground movement due to: - Aquifer depressurisation and recovery - Lake filling	- Recovery of aquifer water levels - Recovery of coal water levels - Changes in forces associated with water levels	- Members of the public - Public and private infrastructure - Private property - Drainage systems - Waterways - ENGIE assets (pump bores etc.)	- Rebound of ground surface levels - Change in groundwater or surface water flow movements and quality - Impacts to infrastructure - Impacts to private property	**Administrative Controls:** - Aquifer depressurisation (CC #0103) - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Penstock - 3G1 Water Flow (Morwell River Flood Diversion Structure) (CC#1107) - Verification modelling - Regional groundwater committee	Land, Property and Infrastructure	3	1	Medium	**Engineering Controls:** - Maintain Lake Level RL+45m AHD (New CC#123) - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) - Depressurisation of aquifer & extraction license (CC #0103) - Verification modelling **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245) - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) - Morwell River interconnection Structure (CC#1107)	3	1	Medium	**Engineering Controls:** - Maintain pit water level	Maintain Pit Void Water Level	3	1	Medium	**Active Rehabilitation:** If the event that ground movement occurs, it'll cause reversible damage to the environment - resulting in a Moderate consequence. Likelihood of experiencing movement causing damage is rare. **Passive Rehabilitation:** There will be a period when the pumps are turned off from filling the pit void where there is a higher likelihood of ground movement from the aquifers stabilising. However this increase in risk wouldn't warrant an increase in the consequence rating of Moderate or likelihood of rare. **Post Closure:** The Golder technical assessment demonstrates that there is negligible difference between a stable passive phase and post closure. The team believes that the consequence and likelihood remain the same. In addition, for ground movement beyond the mine licence area, differential movement across a house needs to be small to cause damage. This damage is reduced in post closure phase as small differentials are unforeseeable.		Risk is reduced SFAIRP.
18	Mine Void	Mine batters and floor	Geotechnical	Floor heave	Uncontrolled floor heave due to loss of weight balance	- Uncontrolled movement of mine floor	- Batters & floors - Local surface drainage - Local infrastructure - Aquifers & underlying strata - Receptors sensitive to ground movement (close proximity to crest) This risk is restricted to environmental impacts only. Batter instability due to floor heave resulting in loss of infrastructure is assessed separately in Risk #12.	- Batter instability (Refer Risk #12) - Environmental impact incl. water quality issues - Localised movement leading to cracking or ground movement close to crest	**Engineering Controls:** - Filling the mine / adding weight to a trigger level as per the TARPs - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections (CC#0245) - Regional Groundwater Committee Annual Report & Groundwater Committee 5-Yearly Review Document	The Environment	5	1	High	**Engineering Controls:** - Maintain Lake Level RL+45m AHD (New CC#123) - Design - Geometry of Batters, Benches, Embankment and Rehabilitation Design (CC #0119) - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Monitoring of ground movement, erosion and hydrogeological conditions by instrumentation (CC #0601) - Verification of predicted modelling **Supporting Documents:** - GCMP including all geotechnical Domains, inspections & TARPs. - Geotechnical Inspections inc MMD redesign (CC#0245)	3	1	Medium	**Engineering Controls:** - Maintaining the lake within acceptable range (RL +45m) **Administrative Controls:** - Monitoring of aquifer pressure recovery within acceptable range **Supporting Documents:** - Post closure management plan (incl elements of previous GCMP, PS, mitigation contingencies)	Aquifer depressurisation Maintain Pit Void Water Level	3	1	Medium	**Active Rehabilitation:** The team believes that the consequence is Critical as filling creates a buffer until aquifer depressurisation is unnecessary, and the likelihood is Rare has this has occurred once in the last 60 years. **Passive Rehabilitation:** The team believes that the consequence will reduce to Moderate as it is more localised and the mine water has been filled. The team believes that the likelihood will remain the same as weight balance is at the maximum and aquifer pressure is at a minimum at the completion of pumping, so the safety buffer is at its greatest. **Post Closure:** The team believes that the consequence and likelihood remain the same. This is a long term risk because the aquifer pressure increases, but the likelihood remains Rare.		Risk is reduced SFAIRP.
19	Mine Surrounds	Landfills and disposal areas	Environment	Contamination (e.g. ash, hard rubbish, asbestos)	EPA Licensed landfills (ash, hard rubbish & asbestos landfill) loss of containment and seepage due to: - Inadequate design - Poor construction / unsuitable construction materials - Seismic events - Weather events (Note: Excluding HARA)	- Mobilisation of landfill materials - Erosion of caps - Differential settlement of landfills - Airborne particles: windblown dust and asbestos fibres	- Member of the public - Third party property & assets - Flora & fauna - Environmental values of Bennett's & Eel Hole Creek - Morwell Wetlands - Surface water	- Impact to human health e.g. inhalation of asbestos - Adverse impacts on beneficial of downstream flora & fauna of surface water - Damage to private & public assets - Adverse impacts to environmental uses of Bennett's & Eel Hole Creek	**Engineering Controls:** - Waste placement (asbestos), capping & rehabilitation in accordance with EPA License requirements - Prevent access to asbestos dumps to the public until license surrender i.e. fencing & signage - Designs for closure in accordance with EPA & ANCOLD requirements - Surcharges installed as per design on HAP4 (CC #0119) **Administrative Controls:** - Security measures to limit vehicle access (e.g. fencing) - EPA endorsement of design & implementation - Review of EPA requirements to ensure post closure land uses are appropriate **Supporting Documents:** - Landfill Management Plan (EPA requirement) - ANCOLD Guidance - Land management plan - Aftercare plan - EPA license requirements	Any Member of Public	5	1	High	**Engineering Controls:** - Surcharges installed as per design on HAP4 (CC #0119) **Administrative Controls:** - EPA endorsement of design & implementation - EPA Auditor reports - Liability bond **Supporting Documents:** - Aftercare management plan	5	1	High	**Engineering Controls:** - Fencing / controlled access **Supporting Documents:** - Aftercare management plan	EPA Licensed Landfill Management	5	1	High	**Active Rehabilitation:** The team believes that the consequences is Critical as the ash will have long term chronic effects, based on proximity of public receptors to dumps. However, the team believes the likelihood of such an event is Rare. **Passive Rehabilitation:** The team believes that the risk remains the same during the passive rehabilitation phase. The team noted that the likelihood cannot achieve further reduction through the risk matrix. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase.		Risk is reduced SFAIRP.
20	Mine Surrounds	Watercourses, storages and diversion structures	Environment	Structural failure	Dams and water retaining structure failure, including: - Recirculation Pond - Southern Outlet Pond - Treated Effluent Pond - Overburden Runoff Treatment Pond - Eel Hole Creek Levee (Note: Excluding HCP and FLRP. Levees are included in Coal & OB in risk ID 10)	- Overtopping - Embankment failure - Piping	- Public & private infrastructure - Private property (NORP) - Waterways (Bennett's Creek) - Surface drainage - Flora & fauna	- Uncontrolled release of water - Flooding / inundation of downstream - Impacts to downstream water quality	**Engineering Controls:** - Decommissioning of dams **Administrative Controls:** - Dams surveillance & inspection program - GNSS Real-time ground movement monitoring - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - GCMP - ANCOLD Guidance - Dam Management Plan	The Environment	3	1	Medium	**Engineering Controls:** - Landform design takes into account catchment design (CC #0119) - Dams removed **Administrative Controls:** - Dams surveillance & inspection program - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - Dam management plan	2	1	Low	**Engineering Controls:** - Landform design takes into account catchment areas	Final Landform Design	1	1	Low	**Active Rehabilitation:** The team believes that a dam and/or water retaining structure failure could potentially result in an environmental contamination event, which may require clean up and rehabilitation expected to run for weeks. As such, the consequence is deemed Moderate. As this scenario has not occurred in the past, therefore the likelihood of this event is Rare. **Passive Rehabilitation:** In the passive rehabilitation phase, the dams will be removed. Should a runoff event occur, the runoff could be discharged directly into the environment within the acceptable range. Though clean-up and rehabilitation may be required, this can be completed within days. Therefore, the consequence will reduce to Minor. Due to limitation of the risk matrix, no further reduction in the likelihood could be achieved. Therefore, the likelihood of this event remains as Rare. **Post Closure:** In the post closure phase, the consequence impacts is expected to be insignificant as there is minimal environmental impact and no noticeable effects on the environment. The likelihood of this event remains as Rare.		Risk is reduced SFAIRP.
21	Mine Void	Mine void lake	Environment	Extreme weather (e.g. rainfall)	Extreme rainfall event resulting in overtopping of pit lake	- Surface water channels - Water retaining structures - Levees structure failure / overtopping - Flood diversion structure failure / overtopping - Failure of inlet & outlet structures	- Flora and fauna - Pit lake - Rehabilitated landform - Morwell River - Eel Hole Creek	- Increase flow downstream - Impact to flora and fauna - River stream bed damage - Failure of levees impacting rehabilitated landform	**Engineering Controls:** - Controlled outlet structure **Supporting Documents:** - Ground Control Management Plan (GCMP) incl. trigger action response plan, severe weather response plans, dams, routine monitoring - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601)	The Environment	3	1	Medium	**Engineering Controls:** - Controlled outlet structure - Inlet structure **Administrative Controls:** - Monitoring of stream flows **Supporting Documents:** - Ground Control Management Plan (GCMP) incl. trigger action response plan, severe weather response plans, dams, routine monitoring - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) - Runoff Management Plan - Severe Weather Preparedness Plan	3	1	Medium	**Engineering Controls:** - Controlled outlet structure - Inlet structure **Administrative Controls:** - Monitoring of stream flows **Supporting Documents:** - Post closure monitoring & maintenance plan	Outlet structures Inlet structures	3	1	Medium	**Active Rehabilitation:** The structures are designed for limited time of exposure and includes downtime to undertake the inspections. There is substantial offset between the pit void and river. The overtopping of the pit lake could potentially result in localised contamination of surface water / ground water aquifer leading to change in environmental values. As such, the consequence is deemed as Moderate. The likelihood is Rare based on previous events and size of rainfall event to occur. **Passive Rehabilitation:** A runoff management plan will be developed during passive rehabilitation phase, and stream flows are monitored during extreme rainfall events. Additionally, the inlet structure and controlled outlet structures will be redesigned to manage extreme rainfall events. The team suggests that the consequence will remain as Moderate and the likelihood will remain as Rare for this scenario. **Post Closure:** In the post closure phase, the team believes that the consequence and likelihood will remain the same.		Risk is reduced SFAIRP.
22	Mine Void	Mine void lake	Environment	Contamination (e.g. acid sulphate soil)	Acid Sulphate Soils (ASS) resulting from: - Exposure of ASS during construction - Inundation and mobilisation of ASS during water table recovery	- Runoff from disturbed materials - Groundwater flux	- Pit lake water quality - Shallow aquifers there are consequences offsite - Terrestrial and aquatic ecosystems	- Exposure to acid sulphate soils in surface water / ground water	**Engineering Controls:** - Targeted removal / remediation **Administrative Controls:** - Groundwater monitoring - Acid Sulphate Soil (ASS) assessment of target areas if required **Supporting Documents:** - ASS Management Plan - Construction Environmental Management Plan (CEMP) - EES Technical Assessment - Land & Solid Waste - Mine void water quality study on acid producing materials	The Environment	3	1	Medium	None identified.	N/A	N/A	RISK ELIMINATED	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** The team noted that should there be an exposure to acid sulphate soil, the clean-up could be achievable in weeks. Therefore, the team believes that the consequence is Moderate whilst the likelihood of the event is Rare. **Passive Rehabilitation:** In the passive rehabilitation phase, it is anticipated that all rehabilitation works have completed and no further excavation activities will occur. As such, the risk of exposure to acid sulphate soils is eliminated. **Post Closure:** This risk is eliminated.		Risk is reduced SFAIRP.

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Consequence	Likelihood	Risk Rating	Controls for Passive Rehabilitation	Consequence	Likelihood	Risk Rating	Controls for Post Closure	Performance Standards Post Closure	Consequence	Likelihood	Risk Rating	Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
23	All	All	Environment	Dust	Generation of dust from exposed surfaces (e.g. coal batters, exposed overburden dumps) from rehabilitation activities including but not limited to, earthworks and equipment travelling on access roads	- Wind / air movement	- Residents and surrounding areas - Surface water - Land surface erosion - Native flora and fauna	- Nuisance - Visual amenity degradation - Health impacts from inhalation - Impacts to native vegetation and habitat	**Engineering Controls:** - Onsite real time monitoring of dust (PM10 & PM2.5) - Preventative dust suppression measures e.g. water cart, water sprays on coal area (CC #0443) - Ongoing seeding of rehabilitated batters - Mine filling to reduce exposed surfaces that can generate dust - Rehab of redundant roads **Administrative Controls:** - Modelling of dust from the mine operations has been completed - Activity & workplace planning **Supporting Documents:** - Severe weather preparedness plans - Dust trigger action response plan - CEMP - Worksite Environmental Management Plan (WEMP) - Dust modelling report	Any Member of Public	2	3	Medium	**Engineering Controls:** - Vegetation cover on rehabilitated batters and external overburden dumps - Rehab of redundant roads - Exposed coal is covered (capped) and/or submerged - Onsite real time monitoring of dust (PM10 & PM2.5) **Administrative Controls:** - Maintenance of vegetation cover - Air quality monitoring - Activity & workplace planning **Supporting Documents:** - Severe weather preparedness plans - Dust trigger action response plan	1	2	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		1	2	Low	**Active Rehabilitation:** There has been no formal records on dust complaints during high wind events and it is difficult to determine where the dust source is coming from. However members of public have previously expressed concerns on visuals of dust plumes during high wind events which remained within the site boundary. In line with the EES technical study conducted, dust implications are considered low. With the current controls in place, including dust suppression measures (e.g. water sprays), a Minor effect is anticipated on amenity of the community or individuals. The likelihood of this event is Possible. **Passive Rehabilitation:** During the passive rehabilitation phase, there will be reduction of activities on site and no earthworks, where the majority of vegetation has been established and is sustaining as a cover medium. The site will be of similar nature to adjoining land. Therefore, the team believes that the consequence will reduce to Insignificant. The team believes that the likelihood will reduce to Unlikely due to the controls around monitoring and maintenance and there still may be dust around. **Post Closure:** The team believes that the consequence will decrease however as it is already the lowest category, it cannot be reduced further on the matrix. The likelihood will remain as Unlikely.		Risk is reduced SFAIRP.
24	All	All	Environment	Noise & vibration	Generation of noise & vibration from rehabilitation works	- Earthmoving equipment - Plant & machinery	- Members of public, community & adjoining residents - Public amenity - Fauna	- Impacts to public amenity - Interruption to fauna habitat - Nuisance	**Engineering Controls:** - Appropriate & suitable equipment selection for activities - Buffer around site boundary (e.g. distance from site) **Administrative Controls:** - Noise & vibration modelling - Activity planning (i.e. hours of operation) - Regular maintenance of equipment & machinery - Inspection regime during earthworks **Supporting Documents:** - EES Technical Assessment - Noise & Vibration - CEMP - WEMP	Any Member of Public	2	2	Low	**Engineering Controls:** - Buffer around site boundary (e.g. distance from site) - No major earthworks to be conducted - Minor equipment / light vehicle remaining **Administrative Controls:** - Activity planning (i.e. hours of operation) - Regular maintenance of equipment **Supporting Documents:** - EES Technical Assessment - Noise & Vibration - CEMP - WEMP	1	1	Low	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** Exposure to noise and vibration from site rehabilitation works is only applicable during active rehabilitation phase, due to the rehabilitation activities occurring. The team believes there is a Minor effect on amenity of the community or individual. The likelihood of this event is Unlikely. **Passive Rehabilitation:** In the passive rehabilitation phase, there will be maintenance activities occurring, with no major noise generated, similar to background noises. As such, the consequence impact remains as Minor and the likelihood reduces to Rare. **Post Closure:** There are no rehabilitation or major maintenance activities that could result in offsite noise and vibration impact during the post closure phase, therefore the risk is eliminated. This is in line with the findings from the EES Noise & Vibration Technical Assessment.		Risk is reduced SFAIRP.
25	All	All	Environment	Visual amenity	Visual amenity impacts from rehabilitation works (e.g. light, visual)	- Earthworks - Site security lighting (e.g. fixed lighting) - Unvegetated landform	- Members of public, community & adjoining residents - Public amenity - Visual of pit lake	- Impacts to public amenity - Nuisance	**Engineering Controls:** - Final landform design (i.e. bunding, viewing mount, placement of material) - Fixed lighting design (i.e. flooding, directional) **Administrative Controls:** - Activity planning (i.e. hours of operation) **Supporting Documents:** - EES Technical Assessment - Landscape & Visual	Any Member of Public	2	1	Low	None identified.	1	1	Low	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** Visual amenity impacts from the site rehabilitation works is only applicable during active rehabilitation phase, due to the rehabilitation activities occurring. As part of the site rehabilitation works. the overall visual amenity of the site will improve from its current state, therefore the team believes there is a Minor consequence effect on amenity of the community or individual. Additionally, there has been no public complaints raised associated with visual amenity impacts, therefore the likelihood of this event is deemed Rare. **Passive Rehabilitation:** In the passive rehabilitation phase, the visual appearance of the site will be similar to adjoining landform surrounds and in line with land use acceptability criteria. As such, the team believes that the consequence of this event will reduce to Insignificant. However, due to limitations of the risk matrix. the likelihood of this event remains as Rare. **Post Closure:** This risk is eliminated during post closure phase as the visual landscape of the rehabilitated land will form part of the final landform which will blend into the surrounding lands.		Risk is reduced SFAIRP.
26	All	All	Environment	Odour & fumes	Generation of odour & fumes from rehabilitation works	- Decomposition of bio materials (i.e. landfill) - Imported materials - Saturated organic clays generating odour - Pit lake (mixing of stratificated materials)	- Members of public, community & adjoining residents - Public amenity	- Impacts to public amenity - Nuisance	**Engineering Controls:** - Landfill does not have bio materials, therefore not producing odours and in line with EPA requirements - Buffer zones - The odours generated from the imported materials do not leave site **Administrative Controls:** - Activity planning (i.e. to avoid movement of saturated material on high wind days) **Supporting Documents:** - EES Technical Assessment - Hydronumerics assessment on stratification (no odour mentioned in the report) - Imported materials management plan	Any Member of Public	1	2	Low	None identified.	1	1	Low	None identified.		1	1	Low	**Active Rehabilitation:** The hydronumerics assessment on stratification indicates negligible impacts on odour and fumes (i.e. sulphates) from pit lake stratification. The pit lake is more likely to be continuously mixed than flipping and releasing sulphates. All odours from organic material are local and remains well within the site boundary. Therefore, the consequence is deemed Insignificant, as there is only a small reduction in the amenity of the community or individuals. The likelihood of this event occurring is Unlikely. **Passive Rehabilitation:** In the passive rehabilitation phase, the remaining source for odour concerns is the pit lake. Therefore, the consequence remains as Insignificant, whilst the likelihood reduces to Rare because studies show the lake will continuously mix and avoid releasing sulphates. **Post Closure:** The risk profile remains the same for the post closure phase, where the consequence remains as Insignificant and likelihood remains as Rare.		Risk is reduced SFAIRP.
27	All	All	Environment	Greenhouse gases	Greenhouse gases generated on site	- Use of electricity - Vehicles, equipment & mobile plant	- Air quality - Exhaust emissions	- Air contamination - Visual amenity degradation	**Engineering Controls:** - Fixed equipment are electrically powered instead of diesel **Administrative Controls:** - Maintenance of equipment (i.e. maintain efficiency) - Activity planning (i.e. optimisation of plant machinery use) **Supporting Documents:** - EES Technical Assessment - Air Quality (GHG)	The Environment	1	1	Low	**Engineering Controls:** - Fixed equipment are electrically powered instead of diesel **Administrative Controls:** - Maintenance of equipment (i.e. maintain efficiency) - Activity planning (i.e. optimisation of plant machinery use) **Supporting Documents:** - EES Technical Assessment - Air Quality (GHG)	1	1	Low	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** The sources greenhouse gases generated on site during the active rehabilitation phase include normal electricity use and diesel consumption from vehicles and equipment / machinery. The team has indicated that electricity and diesel consumption at site will decrease over time. As such, the consequence is deemed Insignificant as there is minimal environmental impact and no noticeable effect beyond the immediate occurrence. The likelihood of this event occurring is Rare. **Passive Rehabilitation:** In the passive rehabilitation phase, the quantity of machinery and equipment used will reduce over time, which mainly be needed for maintenance activities. The consequence and likelihood of this remains as Insignificant and Rare respectively. **Post Closure:** During post closure there will be no need for greenhouse gas emitting equipment. As such, the risk is eliminated.		Risk is reduced SFAIRP.
28	All	All	Environment	Weed & pathogen	Spread of declared weed and pathogens	- Vehicles - Airborne - Animal borne - Water transfer - Disturbance and movement of material	- Habitat - Flora & Fauna (biodiversity) - Post closure land user - Wetlands - Morwell river - Pastoral land - Rehabilitated landform	- New or increase to declared weed population present within the mining licence area due to rehabilitation works - Declared weeds spread to neighbouring properties of the mining licence area - Failure of revegetation / batter cover causing erosion / instability - Infestation of weeds at rivers impacting downstream users - Un-declared weed spread	**Administrative Controls:** - Cleaning of earth moving plant & equipment - Active maintenance of declared weeds - Lease and license condition requirements **Supporting Documents:** - Weed Management Plan (incorporating Catchment & Land Protection Act requirements)	Land, Property and Infrastructure	2	2	Low	**Administrative Controls:** - Lease and license condition requirements - Active maintenance of declared weeds **Supporting Documents:** - Weed Management Plan (incorporating Catchment & Land Protection Act requirements)	2	2	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		2	2	Low	**Active Rehabilitation:** The team believes that the consequence is Minor and the likelihood is Unlikely, due to the potential for weeds in the vegetation, however the team noted that there are no known pathogens on site. The potential for spread remains as it could impact established vegetation. **Passive Rehabilitation:** During the passive rehabilitation phase, the team believes that both the consequence and likelihood will remain the same as Minor and Unlikely. There should not be any new infestations except for wind blown. The team noted that weeds are an issue for all land users and will remain as an ongoing issue. **Post Closure:** The team believes that the consequence and likelihood will remain the same,		Risk is reduced SFAIRP.
29	Mine Void	Mine void lake	Environment	Contamination (e.g. water sources)	Pit lake temporarily impacted due to contamination from MMD and other surface water source(s) Note: Deliberate contamination by third party is excluded from this risk. This should be covered in the Security risks identified.	- Interconnection of water bodies (passive rehabilitation phase only) - MMD - Site runoff (i.e. from overburden dumps) - Erosion	- Health impacts to recreational users - Impacts to flora & fauna in Morwell River - Impacts to lake ecology - End users	- Health impacts of member/s of public due to contact with biologically or chemically polluted waters - End users impacted - Pit water quality impacted (incl. turbidity) - Damage to fauna and flora - Loss of aquatic habitat	**Engineering Controls:** - Gross pollutant trap on MMD - Fencing - Landform design - Redesign and maintenance of Morwell Main Drain (MMD), includes lining (CC #0576) Refer to Geotechnical Risk ID 11 for additional controls **Administrative Controls:** - Monitoring of water quality as per sampling regime - Investigated and quantify quality of water used to fill the pit - Pit water quality investigations & modelling including understanding water sources for lake filling **Supporting Documents:** - RGS & Hydronumerics assessment for stratification - Gippsland Water Supply Contract (i.e. source, pathway etc.)	The Environment	1	1	Low	**Engineering Controls:** - Gross pollutant trap on MMD - Fencing - Controlled water outlet structures **Administrative Controls:** - Monitoring of water quality as per sampling regime **Supporting Documents:** - Gippsland Water Supply Contract (i.e. source, pathway etc.) - Ecological studies	1	1	Low	**Engineering Controls:** - Gross pollutant trap on MMD - Controlled water outlet structures **Administrative Controls:** - Monitoring of water quality as per sampling regime (less rigorous) **Supporting Documents:** - Post closure monitoring and maintenance plan - Post closure risk management plan	Outlet Structures Gross Pollutant Trap for MMD Pit Void Water Quality	2	1	Low	**Active Rehabilitation:** This risk is applicable for post closure, therefore is rated low during the active phase. This is because a member of public does not have access to site during active rehabilitation phase and monitoring of water quality is in place. **Passive Rehabilitation:** This risk is applicable for post closure, therefore is rated low during the passive phase. This is because a member of public does not have access to site during passive rehabilitation phase and monitoring of water quality is in place. **Post Closure:** This risk is applicable for post closure. The rating is currently low, however the team believes that the consequence rating will increase to Minor during the post closure phase due to potential public access at Milestone 3 (subject to government/council regulations) but the likelihood with remain Rare. The team noted that there is a safety/security risk with public access and assumed the law of land is in place. The pit water modelling conducted is assumed correct and verified e.g. modelled over 100 yrs, and includes climate change assumptions built into the modelling.	Water quality (turbidity) is expected to be impacted more in filling during active rehab. This risk is driven by interaction with public access. Water quality will not lead to a fatality of a member of public. The impacts of poor water quality on flora and fauna remains minor. The monitoring and management of water quality during passive rehabilitation phase is yet to be detailed on whether they exceed the limits of water quality.	Risk is reduced SFAIRP.
30	Mine Void	Mine void lake	Environment	Water quality	Water quality degrades in the pit lake due to geochemical reactions within pit such as acid generation, leaching of contaminants from HARA, PFAS exposure	- Exposure to contaminated pit lake - Natural reactions of water with coal, sediments, dumps and ash	- Health impacts to recreational users - Impacts to flora & fauna - Impacts to lake ecology - End users	- Health impacts of member/s of public due to contact with biologically or chemically polluted waters - End users impacted - Pit water quality impacted - Damage to fauna and flora - Loss of aquatic habitat	**Engineering Controls:** - HARA rehabilitation (incl. capping) **Administrative Controls:** - Monitoring of water quality as per sampling regime - Pit water quality investigations & modelling **Supporting Documents:** - RGS Technical Study for EES - HARA Rehabilitation Plan - RGS & Hydronumerics assessment for stratification	The Environment	1	1	Low	**Engineering Controls:** - HARA rehabilitation (incl. capping) **Administrative Controls:** - Monitoring of water quality as per sampling regime - Pit water quality investigations & modelling **Supporting Documents:** - HARA Rehabilitation Plan	N/A	N/A	RISK ELIMINATED	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** During the active rehabilitation phase, there is a potential for water quality being impacted from interaction with coal. With the current controls in place such as HARA rehabilitation (including capping), the team believes that there will be minimal environmental impact. As such, the consequence is deemed insignificant and the likelihood of this event is Rare. **Passive Rehabilitation:** In the passive rehabilitation phase, all coal is either submerged and/or capped. As such, the interaction with coal has ceased and therefore risk is eliminated in the passive rehabilitation phase. **Post Closure:** This risk is eliminated and not assessed.	Water quality (turbidity) is expected to be impacted more in filling during active rehab. This risk is driven by interaction with public access. Water quality will not lead to a fatality of a member of public. The impacts of poor water quality on flora and fauna remains Insignificant. There are studies done on cenosphere and it shows that cenospheres are not present, hence excluded from this risk assessment.	Risk is reduced SFAIRP.

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Consequence	Likelihood	Risk Rating	Controls for Passive Rehabilitation	Consequence	Likelihood	Risk Rating	Controls for Post Closure	Performance Standards Post Closure	Consequence	Likelihood	Risk Rating	Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
31	Mine Void	Mine void lake	Environment	Water quality	Poor water quality in the pit lake due to biological activity resulting from nutrients in source water (i.e. blue green algae)	- MMD - Surface runoff - Increased fertiliser use - Nutrients leached	- Health impacts to recreational users if in direct contact - Impacts to flora & fauna - Impacts to lake ecology - End users - Pit lake water quality	- Health impacts of member/s of public due to contact with biologically or chemically polluted waters - End users impacted - Pit water quality impacted - Damage to fauna and flora - Loss of aquatic habitat	**Engineering Controls:** - Fencing **Administrative Controls:** - Monitoring of water quality & nutrient levels as per sampling regime - Pit water quality investigations & modelling including understanding water sources for lake filling - Signage following an outbreak **Supporting Documents:** - Hydronumerics assessment for stratification	The Environment	1	1	Low	**Engineering Controls:** - Fencing **Administrative Controls:** - Monitoring of water quality & nutrient levels as per sampling regime - Pit water quality investigations & modelling including understanding water sources for lake filling - Signage following an outbreak	1	1	Low	**Administrative Controls:** - Monitoring of water quality as per sampling regime **Supporting Documents:** - Post closure monitoring and maintenance plan - Post closure risk management plan	Pit Void Water Quality	2	1	Low	**Active Rehabilitation:** This risk is applicable for post closure, therefore is rated low during the active phase. This is because a member of public does not have access to site during active rehabilitation phase and monitoring of water quality is in place. **Passive Rehabilitation:** This risk is applicable for post closure, therefore is rated low during the passive phase. This is because a member of public does not have access to site during passive rehabilitation phase and monitoring of water quality is in place. **Post Closure:** This risk is applicable for post closure. The rating is currently low, however the team believes that the consequence rating will increase to Minor during the post closure phase due to potential public access at Milestone 3 (subject to government/council regulations) but the likelihood with remain Rare as the chance of the consequence occurring wouldn't be any higher than other bodies of water in recreational public areas.	Water quality (turbidity) is expected to be impacted more in filling during active rehab. This risk is driven by interaction with public access. Water quality will not lead to a fatality of a member of public. The impacts of poor water quality on flora and fauna remains minor.	Risk is reduced SFAIRP.
32	Mine Void	Mine void lake	Environment	Stratification	Stratification of pit lake followed by a mixing event	- Wind shear - Temperature variation - Change in chemical composition (i.e. density)	- Health impacts to recreational users if in direct contact - Impacts to flora & fauna - Impacts to lake ecology - End users	- Health impacts of member/s of public due to contact with biologically or chemically polluted waters - End users impacted - Pit water quality impacted - Damage to fauna and flora - Loss of aquatic habitat - Increased water salinity at the top	**Engineering Controls:** - Fencing **Supporting Documents:** - Hydronumerics Assessment for Stratification - RGS Lake Water Balance & Water Quality Assessment	The Environment	1	1	Low	**Engineering Controls:** - Fencing **Administrative Controls:** - Monitoring of water quality & nutrient levels as per sampling regime - Signage following an outbreak **Supporting Documents:** - Hydronumerics Assessment for Stratification - RGS Lake Water Balance & Water Quality Assessment	1	1	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan - Post closure risk management plan - Hydronumerics Assessment for Stratification - RGS Lake Water Balance & Water Quality Assessment	Pit Void Water Quality	1	1	Low	**Active Rehabilitation:** Based on the EES hydronumerics assessment for stratification, the study indicates that there are minimal environmental impacts from the stratification of the pit lake followed by a mixing event. Therefore, the consequence and likelihood of this event occurring is Insignificant and Rare. **Passive Rehabilitation:** With the water quality monitoring and sampling controls in place, the consequence and likelihood of this event remains the same as Insignificant and Rare for the passive rehabilitation phase. **Post Closure:** The hydronumerics modelling assessment conducted is assumed to be accurate and verified (e.g. modelled over a 100 yrs period and includes climate change assumptions). As such, the consequence and likelihood of this event remains as Insignificant and Rare for the post closure phase.	Water quality (turbidity) is expected to be impacted more in filling during active rehab. This risk is driven by interaction with public access. Water quality will not lead to a fatality of a member of public. The impacts of poor water quality on flora and fauna remains minor.	Risk is reduced SFAIRP.
33	Mine Void	Mine void lake	Environment	Water quality	Poor pit lake water quality entering Haunted Hills aquifer Note: This risk is for the Haunted Hills Aquifer only, at Passive Rehabilitation and Post Closure phase only.	- Pit lake being a recharge zone for Haunted Hills Aquifer - Downstream river impacts	- Haunted Hills Aquifer (Shallow Aquifer System) and environmental values of river system where groundwater discharges (passive stage) - Groundwater dependent ecosystems (e.g. terrestrial and aquatic biota)	- Potential contamination groundwater within the Haunted Hills Aquifer - Impacts on end water users - Impacts to groundwater dependent ecosystems	None identified.	The Environment	N/A	N/A	NOT ASSESSED	**Engineering Controls:** - Hydrogeological / groundwater modelling & monitoring including geochemical characterisation, conceptual & numerical model e.g. coal salinity (CC #0601) **Administrative Controls:** - Pit water quality investigations & modelling - Pit water quality monitoring as per sampling regime **Supporting Documents:** - EES Technical Assessment - Groundwater studies, Catchments & Wetlands - DSI / PSI Investigation Reports and associated Remediation Action Plan	1	2	Low	**Engineering Controls:** - Maintaining lake water level **Supporting Documents:** - Post closure monitoring and maintenance plan		1	1	Low	A key assumption for this risk is that the water quality remains consistent with background source water quality during the study period. **Active Rehabilitation:** This is not a risk during active rehabilitation phase, hence not assessed. **Passive Rehabilitation:** In the passive rehabilitation phase, there is no active pumping activities. Once pumping is ceased and the aquifer is recovering, the team believes the consequence is Insignificant as there is minimal environmental impacts and no noticeable effect beyond the immediate occurrence. The likelihood of this event is Rare based on background water quality assumptions. **Post Closure:** The team believes that the consequence remains as Insignificant whilst the likelihood will decrease to Rare during the post closure phase.	Only localised impact anticipated not for the long term users.	Risk is reduced SFAIRP.
34	Mine Void	Mine void lake	Environment	Water quality	Poor pit lake water quality entering M1 aquifer	- Interconnectivity between pit lake and M1 Aquifers	- M1 Aquifers and environmental values of river system where groundwater discharges (passive stage)	- Potential contamination of groundwater in the M1 Aquifers Note: The M1 Aquifer is quite shallow below the floor of the existing mine in some areas, and there is potential for strong connection to pit lake in these areas.	**Engineering Controls:** - Placement of internal overburden dump to reduce interconnection potential - Decommissioning and sealing of bores - Manage M1 pumping to minimise seepage from lake (for active rehabilitation stage) - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Groundwater and mine void water quality modelling including geochemical characterisation, conceptual & numerical model - Monitoring of M1 Aquifer water quality (ongoing) (CC #1052) - Monitoring of lake water quality for top up (in perpetuity) likely to be high due to selection of sources of water (ongoing) - Monitoring of ground movement and hydrogeological conditions (CC #0601) **Supporting Documents:** - EES Technical Assessment - Groundwater studies - Surface water Monitoring and Management Plan	The Environment	2	2	Low	**Engineering Controls:** - Maintaining lake water level at RL+45m - Contingency M1 pumping included in the contingency plan for key risks - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Groundwater and mine void water quality modelling - Monitoring of M1 Aquifer water quality (ongoing) (CC #1052) - Monitoring of lake water quality for top up (in perpetuity) likely to be high due to selection of sources of water (ongoing) - Monitoring of ground movement and hydrogeological conditions (CC #0601) **Supporting Documents:** - EES Technical Assessment - Groundwater studies - Surface water Monitoring and Management Plan	2	1	Low	**Administrative Controls:** - Pit water quality monitoring **Supporting Documents:** - Post closure monitoring and maintenance plan	Pit Void Water Quality	2	1	Low	**Active Rehabilitation:** The team believes that the consequence is Minor and likelihood is Unlikely, as the pressure between the pit lake and M1 aquifer will equalise over time and no external impacts to the environment is anticipated. **Passive Rehabilitation:** The team believes that the consequence remain as Minor, however the likelihood will reduce to Rare with the controls in place during passive rehabilitation phase. The gradient between the pit lake and M1 aquifer will re-establish, such that the pit lake is predicted to be in sync in the long term, and any potential contamination will remain well within the local area. **Post Closure:** The team believes that the consequence and likelihood of this event remains the same as Minor and Rare, as the M1 aquifer goes through transition from groundwater gradient reverses.		Risk is reduced SFAIRP.
35	Mine Void	Mine void lake	Environment	Water quality	Poor pit lake water quality entering M2 aquifer	- Interconnectivity between pit lake and M2 Aquifers - Leakage via failed M2 aquifer bores and historical heave area	- M2 Aquifers and environmental values of river system where groundwater discharges (passive stage)	- Potential contamination of M2 Aquifers Note: The M2 Aquifer is well confined at depth with very little connection to the M1 or the pit lake. This limits the potential for contamination.	**Engineering Controls:** - Construction, decommissioning and sealing of bores - Historic heave area for M1 is overlaid with up to 50 m of overburden - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Maintenance of groundwater pressures to achieve weight balance requirements to prevent floor heave - Monitoring of M2 Aquifer water quality - Monitoring of lake water quality for top up (in perpetuity) likely to be high due to selection of sources of water (ongoing) - Groundwater and mine void water quality modelling including geochemical characterisation, conceptual & numerical model - Monitoring of ground movement and hydrogeological conditions (CC #0601) **Supporting Documents:** - EES Technical Assessment - Groundwater studies	The Environment	1	2	Low	**Engineering Controls:** - Maintaining lake water level at RL+45m - Historic heave area for M1 is overlaid with up to 50 m of overburden - Depressurisation of aquifer & extraction license (CC #0103) **Administrative Controls:** - Monitoring of M2 Aquifer water quality (ongoing) (CC #1052) - Monitoring of lake water quality for top up (in perpetuity) likely to be high due to selection of sources of water (ongoing) - Groundwater and mine void water quality modelling - Monitoring of ground movement and hydrogeological conditions by instrumentation (CC #0601) **Supporting Documents:** - EES Technical Assessment - Groundwater studies	1	1	Low	**Engineering Controls:** - Historic heave area for M1 is overlaid with up to 50 m of overburden **Supporting Documents:** - Post closure monitoring and maintenance plan	Pit Void Water Quality	1	1	Low	**Active Rehabilitation:** The team believes that the consequence is Insignificant, lower than M1 Aquifer and likelihood of the event is Unlikely. The team believes that the likelihood is the same as the M1 Aquifer as Unlikely as all the bores have been sealed so there is connection (except for the heaved area). When pumping at the M2 aquifer, maintaining a low pressure head, a higher gradient is expected at the pit lake which will push more water through at small volumes. **Passive Rehabilitation:** The team believes that the consequence remains the same, however the likelihood will reduce to Rare due to active decommissioning and rehabilitating bores. Upon cease of pumping, the ground water levels will recover, the hydraulic gradient between the pit lake and aquifer will reduce, and the M2 aquifer water levels will be greater than the pit lake. **Post Closure:** The team believes that the consequence and likelihood remain the same as activities have been completed at this stage. There is no differential in gradients, the pit water becomes a sink in the long term, and M2 is a confined aquifer at this stage.		Risk is reduced SFAIRP.
36	Mine Void	Mine void lake	Environment	Contamination (e.g. water sources)	Contaminated water discharges from pit lake into receiving waterways	- Surface water systems - Water leaving the site via Morwell River system into sensitive wetlands (approx. 100 km downstream)	- East Gippsland lakes - Ramsar wetlands	- Loss of sedimentation to river system - Pollutants in water quality	None identified.	The Environment	N/A	N/A	NOT ASSESSED	**Engineering Controls:** - Engineered interconnections to manage outflows **Administrative Controls:** - Monitoring and maintenance of water quality - Surface water quality monitoring **Supporting Documents:** - EES Technical Assessment - Catchment, Rivers and Wetlands	1	1	Low	**Engineering Controls:** - Controlled water outlet structures **Administrative Controls:** - Monitoring of pit water quality **Supporting Documents:** - Post closure monitoring and maintenance plan		1	1	Low	**Active Rehabilitation:** This risk is not assessed in the active rehabilitation phase because there is no connection pathway. **Passive Rehabilitation:** If water quality does not achieve the stipulated background criteria, then there will be no interconnection. This is consistent with other sources. There are engineered interconnections to manage outflows from the pit lake. Hence, the team believes that the consequence is Insignificant and the likelihood is Rare. **Post Closure:** The consequence and likelihood of this event remains as Insignificant and Rare in the post closure phase.		Risk is reduced SFAIRP.
37	Mine Surrounds	External overburden dumps	Environment	Water quality	Poor water quality in run off from EOD, including dispersive soils Note: This is run off outside of pit to other areas.	- Rainfall infiltration into overburden dump expressing into surface water	- Biodiversity of Eel Hole Creek - Wetlands - End users - Morwell River - Bennett's Creek & Eel Hole Creek	- Impact to downstream flora & fauna and end users - Negative impacts to beneficial users of groundwater - Adverse impacts of beneficial users of groundwater or surface water	**Engineering Controls:** - Revegetation of Eastern Overburden Dump - Final landform design (CC #0119) e.g. capping - Drainage design (CC #0231) **Administrative Controls:** - Clay capping and top soil capping criteria (e.g. quality, design etc.) **Supporting Documents:** - Vegetation Management Plan - Environmental Management Plan - CEMP - Rehabilitation and aftercare plan for safe use site - asbestos, landfill and ash - SWOP - PSI & DSI and associated Remediation Action Plan - Land maintenance and management plan	The Environment	3	3	Medium	**Engineering Controls:** - Final landform design (CC #0119) e.g. capping **Supporting Documents:** - Vegetation Management Plan - Environmental Management Plan - Rehab and aftercare plan for safe use site - asbestos, landfill and ash - PSI & DSI and associated Remediation Action Plan - Aftercare management plan	1	1	Low	**Engineering Controls:** - Final landform design (CC #0119) e.g. capping **Supporting Documents:** - Post closure monitoring and maintenance plan - Aftercare management plan		1	1	Low	**Active Rehabilitation:** ERM groundwater study shows that water is held within the EOD and licensed area. SWOP is assumed to remain in place for the active rehabilitation phase, until remediation takes over e.g. landform design / engineering controls. The team believes that the consequences is Moderate and the likelihood is Possible. **Passive Rehabilitation:** The team believes that the consequence reduces to Insignificant as there is reduced volume of leachate and improving quality of leachate, therefore there is an insignificant impact on receptors. The team believes that likelihood reduces to Rare. **ACTION:** Further works required to be determined if controls are appropriate. Based on the assumption that the controls identified are in place and working, assessment has been made on passive rehabilitation stage. Further estimation of time for EOD dry out to be determined. Studies to be conducted to develop the criteria included within the Leachate Management Plan. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase. The team noted that further works required		Risk is reduced SFAIRP.

Risk ID	Domain (source)	Sub-domain (source)	Category	Hazard	Source / Event (S)	Pathway (P)	Receptor (R)	Potential Consequence Description S+P+R = PC	Controls for Active Rehabilitation	Consequence Category	Consequence	Likelihood	Risk Rating	Controls for Passive Rehabilitation	Consequence	Likelihood	Risk Rating	Controls for Post Closure	Performance Standards Post Closure	Consequence	Likelihood	Risk Rating	Risk Ranking Assumptions	Comments	SFAIRP / Justification Commentary
38	Mine Surrounds	Infrastructure	Environment	Contamination (e.g. seepage, runoff)	Poor quality seepage or runoff from unidentified contaminated materials (COPCs) within the licence boundary - Recirculation Pond - Southern Outlet Ponds - Works (Treatment) Effluent Pond - Overburden Runoff Treatment Pond	- Runoff and recharge to groundwater	- Environmental values of Bennett's, Eel Hole Creek & groundwater - end users - Soils - Post relinquishment land uses - Pit water quality - Morwell River - Conservation Areas	- Adverse impacts to environmental values of Morwell River, Bennett's, Eel Hole Creek & groundwater (flora and fauna) due to reduction of water quality and flows exiting the licensed area	**Engineering Controls:** - Contaminated soils investigation; cover / rehabilitation **Administrative Controls:** - Implementation of recommendations from PSI & DSI completed - Controls implemented as per the completed 53V & 53X certificate of environmental audit - Monitoring and maintenance **Supporting Documents:** - Cleanup plan - Environmental Management Plan - Risk Management Plan - CEMP	The Environment	3	3	Medium	**Administrative Controls:** - Controls implemented as per the completed 53V & 53X certificate of environmental audit - Appropriate land use selection (completion criteria) **Supporting Documents:** - Environmental Management Plan - Risk Management Plan	1	1	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		1	1	Low	**Active Rehabilitation:** The team believes that the consequences is Moderate and the likelihood is Possible. It is noted that after clean up there will be no contaminated materials left on site. The license certificate will be issued before the active rehabilitation finishes. **Passive Rehabilitation:** The team believes that the consequence will reduce to Insignificant as EPA will provide license certificate, and the likelihood reduced to Rare. **Post Closure:** The team believes that the consequence and likelihood will remain the same during the post closure phase.		Risk is reduced SFAIRP.
39	Mine Surrounds	Remaining land incl. consitvation areas	Environment	Weed & pathogen	Imported material introduces plant or animal pathogens (i.e. phytophera, rust, etc.) or does not support vegetation growth or end-land use	- Imported material placement on rehabilitated areas - Vehicles - Water transfer	- Target ecosystem / post closure land uses - Failure of revegetation plantings - Rehabilitated landform	- Rehabilitated areas do not support post closure land uses due to revegetation failure	**Administrative Controls:** - Verification of top soil material prior to entering site **Supporting Documents:** - CEMP - Construction contract packages to include procedure for selection and use of suitable top soil and substitutes using SMEs - seek advice from certified practicing soil scientist - Imported materials management plan	The Environment	1	4	Medium	**Supporting Documents:** - Land maintenance and management plan (e.g. leasee agreements)	1	2	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan (to include criteria for monitoring of imported material & weed management)		1	1	Low	**Active Rehabilitation:** Based on the current controls in place such as procedure for selection and use of suitable top soil and substitutes through advice from certified practicing soil scientist and imported materials management plan, the team believes that the consequences is Insignificant and the likelihood is Likely. **Passive Rehabilitation:** In the passive rehabilitation phase, there are no rehabilitation activities conducted, with maintenance activities remaining and vegetation will be established. As such, the consequence will reduce to Insignificant and likelihood reduced to Unlikely. **Post Closure:** in the post closure phase, there will be no introduction of imported materials. As such, the consequence remains as Insignificant whilst the likelihood reduces to Rare.		Risk is reduced SFAIRP.
40	All	All	Environment	Vegetation	Unwanted natural recruitment of vegetation	- Wind - Water transfer - Flora & fauna - Topsoil material - Existing vegetation	- Rehabilitated landform	- Loss of vegetation cover / cap	**Engineering Controls:** - Final landform design **Administrative Controls:** - Cleaning of earth moving plant & equipment - Active maintenance of vegetation - Lease and license condition requirements **Supporting Documents:** - Weed Management Plan - Vegetation Management Plan - Imported materials management plan - Aftercare management plan	Land, Property and Infrastructure	2	1	Low	**Administrative Controls:** - Active maintenance of vegetation - Lease and license condition requirements **Supporting Documents:** - Weed Management Plan - Vegetation Management Plan - Aftercare management plan	1	1	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		1	1	Low	**Active Rehabilitation:** In the active rehabilitation phase, should there be unwanted natural recruitment of vegetation on site, it is anticipated that temporary and small scale disruption to agricultural production may occur at no more than 10ha of land. As such, the consequence is deemed Minor. The team believes that the likelihood of this event is Rare as there is a low likelihood of seedlings being impacted by long term vegetation due to insufficient time for it to establish. **Passive Rehabilitation:** In the passive rehabilitation phase, vegetation will be established and will be less sensitive to unwanted vegetation. Continuous monitoring and maintenance will take place. Therefore, the consequence will reduce to insignificant whilst the likelihood remains as Rare. **Post Closure:** In the post closure phase, the natural seed load in soil will reduce over time. The consequence and likelihood of the event remains as Insignificant and Rare, as a reduction in the likelihood cannot be achieved due to the limitation of the risk matrix.		Risk is reduced SFAIRP.
41	Mine Surrounds	Remaining land incl. conservation areas	Environment	Vegetation	Deterioration and damage of remnant and indigenous vegetation	- Ongoing rehabilitation process - Earthworks machinery - Climate - Pathogens	- Remnant vegetation areas - Populations of indigenous terrestrial and aquatic fauna habitat - Areas of offset - Plantings of environmental values (e.g. amenity, stock shelter, riverbanks)	- Unauthorised removal of remnant or regrowth vegetation - Loss of native vegetation - Escalation of diversity of weeds on site - Agricultural productivity for reuse	**Engineering Controls:** - Stock exclusion - Fencing - Offsets - Mapping identification **Supporting Documents:** - CEMP - WEMP - Vegetation management plan - Site Conservation Management Plans - Site Integrated Pest Animal Management Plan - Weed Management Plan - Ecological assessments	The Environment	3	3	Medium	**Engineering Controls:** - Stock exclusion - Fencing - Offsets - Mapping identification **Supporting Documents:** - Vegetation management plan - Site Conservation Management Plans - Site Integrated Pest Animal Management Plan - Weed Management Plan - Ecological assessments	2	2	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		2	2	Low	**Active Rehabilitation:** The team believes that the consequences is Moderate as remnant and indigenous vegetation has been mapped and understood where it is within the mining licence. The team believes that the likelihood is Possible as this has happened within the last 6 months. **Passive Rehabilitation:** The team believes that the consequence reduces to Minor, and the likelihood reduces to Unlikely as there is less activity on site to disturb the soil (water filing only). It is noted that vegetation mapping will be available during this phase to understand what indigenous vegetation remains. **Post Closure:** The team believes that the consequence and likelihood remain the same. It is noted that this risk cannot be controlled at this phase, however it needs to be managed even as a low risk. No weeds travel across the landscape, however the winds can bring in weeds on site.	Note: There is a need to understand how this will be managed post closure.	Risk is reduced SFAIRP.
42	Mine Surrounds	Remaining land incl. conservation areas	Environment	Cultural heritage & historic heritage	Detrimental effect on Aboriginal **Cultural Heritage** values inherent to the wider Gippsland Water system & existing landscape	- Disturbance / destruction of Aboriginal heritage place(s) - Disturbance / destruction of previously un/registered Aboriginal heritage place(s)	- Aboriginal heritage place(s)	- Damage or loss of Aboriginal heritage place(s)	**Administrative Controls:** - Site surveys & inspections as part of CHMP **Supporting Documents:** - CHMP in accordance with Aboriginal Heritage Act 2006 - CVA in consultation with the RAP, gain endorsement and implement recommendations from CVA - Work procedure to relocate / remove aboriginal heritage places prior to works, in accordance with CHMP	Any Member of Public	1	1	Low	**Administrative Controls:** - Site surveys & inspections as part of CHMP - Work procedure to relocate / remove aboriginal heritage places prior to works, in accordance with CHMP - Engagement with future land use owners - Use of planning scheme **Supporting Documents:** - CHMP to provide guidance for future land use owners e.g. mapped areas of known artefacts - CVA in consultation with the RAP, gain endorsement and implement recommendations from CVA	1	1	Low	No controls for Post Closure and therefore this phase is not assessed. Following the final CHMP, there may be a need to revisit the controls relevant for Post Closure phase.		1	1	Low	**Active Rehabilitation:** Identified locations of cultural heritage places prior to works, and removed / relocated prior to works. The team believes that the consequence is Insignificant and the likelihood is Rare. There are no identified cultural heritage value impacts. There are still scattered artefacts in the mine license area, but not where the works are conducted. **Passive Rehabilitation:** The team believes that the consequence and likelihood will remain the same during the passive rehabilitation phase. **Post Closure:** The risk profile is unchanged, and will potentially need to revisit following finalization of the CHMP.		Risk is reduced SFAIRP.
43	Mine Surrounds & Mine Void	Remaining land incl. conservation areas	Environment	Cultural heritage & historic heritage	Rehabilitation activities adversely affect known / unknown **historic heritage** values within: - Closure Domain 1-Mine Void - Closure Domain 3-Mine Surrounds	- Disturbance / destruction of previously un/registered historic heritage place(s)	- Historic heritage place(s) - Closure Domain 1-Mine Void - Closure Domain 3-Mine Surrounds	- Damage or loss of historic heritage place(s)	**Engineering Controls:** - Removal (de-listing) of applicable heritage sites from the VHI **Administrative Controls:** - Implement unexpected finds protocol - Historical Heritage induction - Archaeological supervision / monitoring program where applicable - Site surveys & inspections as part of the Historic Heritage Assessment - Work procedure to relocate / remove historic heritage places prior to works, in accordance with the Historic Heritage Assessment **Supporting Documents:** - CHMP	Any Member of Public	1	1	Low	None identified.	N/A	N/A	RISK ELIMINATED	None identified.		N/A	N/A	RISK ELIMINATED	**Active Rehabilitation:** The team believes that the consequence is Insignificant and the likelihood is Rare, as the site is cleared of historical heritage prior to works. Surveys have been completed and any historic sites found was recorded was relocated / removed with permits applied for. **Passive Rehabilitation:** There are no earthworks present in the passive rehabilitation phase and all identified historical heritage sites will have been identified and removed during the active rehabilitation phase. As such, this risk is eliminated. **Post Closure:** This risk is eliminated during post closure.		Risk is reduced SFAIRP.
44	All	All	Environment	Contamination (e.g. wastes)	Inappropriate management and disposal of materials and waste (e.g. fuel, asbestos, municipal waste, grease / oil)	- Residual sources of contamination due to remaining infrastructure - Incorrect disposal of material during rehabilitation works - Refuelling machinery / equipment - Plant breakdown - Historical contamination	- Remaining surrounding land - Land use - Offsite receptors	- Land contamination - Water contamination - Impacts to offsite land	**Administrative Controls:** - Activity planning - Maintenance of equipment & machinery - EPA licensing & requirements - Spill clean up - Site investigations for historic contamination sites **Supporting Documents:** - Infrastructure demolition, decommissioning & disposal plan (TITLE TO BE UPDATED) - CEMP - WEMP - Site EPA Clean up Plan - DSI / PSI and associated RAPs - EES Technical Assessment - Land & Solid Waste - Unexpected Finds Procedure - Remaining infrastructure register (i.e. asbestos, fuels etc.)	The Environment	2	1	Low	**Administrative Controls:** - Activity planning - Maintenance of equipment & machinery - EPA licensing & requirements - Spill clean up **Supporting Documents:** - Infrastructure demolition, decommissioning & disposal plan (TITLE TO BE UPDATED) - CEMP - WEMP - Site EPA Clean up Plan - EES Technical Assessment - Land & Solid Waste - Unexpected Finds Procedure - Remaining infrastructure register (i.e. asbestos, fuels, concrete etc.)	2	1	Low	**Supporting Documents:** - Remaining infrastructure register (i.e. asbestos, fuels, concrete etc.) - Post closure monitoring & maintenance plan		1	1	Low	**Active Rehabilitation:** The team believes that the consequence is Minor and the likelihood is Rare. In the event of environmental contamination, clean up may be required and can be completed within days. As there are still machinery / equipment on site with rehabilitation works occurring, the likelihood of this event is deemed Unlikely. **Passive Rehabilitation:** In the passive rehabilitation phase, all rehabilitation activities will be completed, with maintenance activities to stay. There will be less equipment on site and minimal movement. As such, the consequence will remain as Minor, whilst the likelihood of this event reducing to Rare. **Post Closure:** in the post closure phase, the team acknowledge that illegal dumping might occur at site therefore the risk will remain and cannot be eliminated. The consequence will be reduced to Insignificant and likelihood of the event remaining as Rare.		Risk is reduced SFAIRP.
45	All	All	Environment	Pest	Spread / increase numbers of pest animals including fox, rabbit, deer and carp	- Whole of site	Whole of Hazelwood site	- Decline in vegetation due to browsing decline in native fauna - Damage to rehabilitated landform	**Administrative Controls:** - Active control program - Monitoring & reporting of pest animals **Supporting Documents:** - Pest animal management plan (incorporating Catchment & Land Protection Act requirements)	The Environment	2	3	Medium	**Administrative Controls:** - Active control program - Monitoring & reporting of pest animals **Supporting Documents:** - Pest animal management plan (incorporating Catchment & Land Protection Act requirements)	2	3	Medium	**Supporting Documents:** - Post closure monitoring & maintenance plan		2	3	Medium	**Active Rehabilitation:** In the active rehabilitation phase, there is potential for pest animals to impact the site vegetation (e.g. deer in wetland). A Minor damage to native fauna population is anticipated (e.g. foxes and cats). The team believes that this event is currently occurring however it is not anticipated to spread or increase. Therefore the likelihood is deemed Possible. **Passive Rehabilitation:** In the passive rehabilitation phase, the consequence and likelihood of the event remains the same as Minor and Possible. **Post Closure:** In the post closure phase, vegetation will be fully established and less likely to be damaged by pest animals. The final land user will be required to maintain the site vegetation to avoid / minimize pest animal spreads, to the same standard of surrounding land uses. As such, the risk profile will stay the same, consequence as Minor and a likelihood of Possible.		Risk is reduced SFAIRP.
46	Mine Surrounds	Remaining land incl. conservation areas	Environment	Rehabilitated land condition	Rehabilitated land not meeting agricultural productivity requirements	- Landform - Restoration of land - Integrity & quality of soil	- Agricultural land	- Decline in productivity or inability to achieve productivity targets of the land use or restricted land use (agricultural)	**Engineering Controls:** - Rehab material geochemical assessment - Land capability assessment by SGS / Landloch **Administrative Controls:** - Routine soil testing - Environmental audits **Supporting Documents:** - Clean up plan - Vegetation Management Plan - Land Use Plan (identifies agricultural land use)	Land, Property and Infrastructure	3	2	Medium	**Engineering Controls:** - Appropriate agricultural practices **Administrative Controls:** - Routine soil testing - Rehabilitation master planning identifies potential agricultural land - Maintenance & repair works where needed **Supporting Documents:** - Vegetation Management Plan - Land Use Plan (identifies agricultural land use)	2	2	Low	**Supporting Documents:** - Post closure monitoring and maintenance plan		N/A	N/A	NOT ASSESSED	**Active Rehabilitation:** In the active rehabilitation phase, a land use plan will be made available to determine the land uses suitable for agricultural activities, providing the opportunity for land management / land improvement. Should there be a need for land remediation to restore land use, a Moderate impact is anticipated where the anticipated loss of value will be within $500K - $1million and a loss of annual seasonal primary production from less than 10ha of land. The likelihood of this event occurring is Unlikely. **Passive Rehabilitation:** In the passive rehabilitation phase, the landform rehabilitation activities will be completed with only repair and maintenance activities to remain. As such, the consequence impact will reduce to Minor, whilst the likelihood of the event remains as Unlikely. **Post Closure:** In the post closure phase, this risk will remain but will be beyond ENGIE's control and will be the responsibility of the final land users. Therefore this risk is not assessed.		Risk is reduced SFAIRP.