



**Baralaba South Project
Environmental Impact Statement**

CHAPTER 18

**Proposed Environmental Management and
Monitoring Commitments**

18 Proposed Environmental Management and Monitoring Commitments

In accordance with the Terms of Reference, this chapter provides a consolidated description of Baralaba South Pty Ltd (the Proponent) management and monitoring commitments that will be implemented for the Baralaba South Project (the Project).

Table 18.1: Summary of Project commitments

Project Matter	Commitment
Rehabilitation	<p>The proponent will separately prepare a PRC Plan for the Project in accordance with the timeframes stated in a notice issued by DES after the grant of the EA.</p> <p>The Project will be progressively rehabilitated to achieve the rehabilitation objectives established for each rehabilitation area. The progress of the rehabilitation will be monitored for a range of performance indicators, against relevant completion criteria, to demonstrate successful rehabilitation of the Project.</p> <p>Topsoil management will be carried out in accordance with a topsoil management plan addressing the following aspects:</p> <ul style="list-style-type: none"> • the delineation of topsoil resources based on the soil assessments already undertaken and providing information on stripping depths and topsoil qualities and quantities; • the delineation of stockpiled topsoil resources to ensure protection from unplanned use or disruption and to assist in prioritising re-use; • a topsoil stockpiling plan that optimises the placement of topsoil stockpiles to avoid rehandling, is located outside the active mine path, and that nominates stockpile design parameters including height (typically up to 3 m) and batter angles (no greater than 1 in 3), as well as information on applicable construction practices; • topsoil stockpile revegetation to assist in stabilisation and erosion control; and • erosion and sediment control methods to be used for areas stripped of topsoil, topsoil stockpiles (including revegetation where warranted) and areas where topsoil is being and has been reapplied, in order to minimise topsoil loss. <p>A topsoil inventory will be maintained for the life of the Project to account for the volumes and locations of topsoil to be progressively stripped, stockpiled and reapplied. The topsoil inventory will assist early identification of potential issues, such as soil balance deficits or poorer quality soils, enabling remedial actions to be planned in advance of mining operations.</p> <p>Topsoil will be respread on reshaped landforms either by scraper or by transporting it to the work area by dump truck and subsequently spreading. The topsoiled area will be deep ripped on the contour to bind the subsoil and topsoil interface and create sufficient surface roughness to assist with plant germination as well as provide early erosion control</p> <p>A Rehabilitation Monitoring Program will be prepared and implemented for the Project which will detail the objectives, methodology, timing and frequency of monitoring appropriate for the Project.</p>

Project Matter	Commitment
<p>Rehabilitation (cont.)</p>	<p>A Draft Progressive Rehabilitation and Closure Plan has been prepared for the Project and will be implemented once approved. The Closure Plan will identify;</p> <ul style="list-style-type: none"> • community consultation information; • post-mining land use (PMLU) and/or non-use management area (NUMA) determination; • rehabilitation and management methodology; • risk assessment; and • a monitoring and maintenance program. <p>The Rehabilitation schedule part includes;</p> <ul style="list-style-type: none"> • nomination of either a PMLU or NUMA for all land within the relevant resource tenures, including land uses for undisturbed land; • identification of when land becomes available for rehabilitation or improvement; • rehabilitation or management milestones to achieve the PMLU or NUMA outcomes; • milestone criteria that demonstrate when each milestone has been completed; • completion dates for each milestone to be achieved; • any conditions considered necessary or desirable; and • a final site design.
<p>Surface water</p>	<p>The water management system for the Project will reduce the use of water and/or production of wastewater or contaminants by:</p> <ul style="list-style-type: none"> • minimise capture of clean surface water from external catchments via catchment diversion; • prioritise recycling and reuse of mine affected water first, ahead of other water sources for site demands including processing and dust suppression; • preferential supply from site water storages over external supply and surface water harvesting; • minimise and manage releases of water to receiving waterways; and • prevent uncontrolled release of mine affected water to receiving waterways in > 95% of years. <p>The standard of containment of the mine affected water storages will meet the environmental objectives for regulated structures containing contaminants outlined in the ‘Guideline for Structures which are Dams or Levees Constructed as part of Environmentally Relevant Activities’ (EHP, 2017a).</p> <p>Erosion and sediment dam controls will be designed and constructed in accordance with the ‘Best Practice Erosion and Sediment Control Guidelines’ (IECA, 2018).</p>

Project Matter	Commitment
<p>Surface water (cont.)</p>	<p>An annual review of the performance of the Water Management System will be undertaken over the mine life to continually inform updates to the Water Management System.</p> <p>The performance of the Water Management System will be assessed against:</p> <ul style="list-style-type: none"> • compliance with the Project’s EA conditions; • results of water monitoring and the REMP; • water demand and supply requirements; and • the implementation of mitigation measures. <p>Mine affected water will be released when conditions in the receiving waterway allow water quality to be maintained at levels which achieve the determined WQOs.</p> <p>A Water Management Plan will be prepared for the Project in consideration of the DES guideline for the ‘Preparation of Water Management Plans for mining activities’ (DEHP, 2012). It will include:</p> <ul style="list-style-type: none"> • A description of the baseline environment, including environmental values and water quality objectives of the receiving waterways, a description of receiving waterways, local and regional groundwater aquifers, current and historical mining and associated activities, site climate conditions and water quality monitoring of the receiving waterways and groundwater aquifers used to establish baseline conditions. • A description of the potential sources of contaminants that could impact on water quality. • A description of the Water Management System including objectives, site storages details and locations, transfer infrastructure, identification of bulk water storages and maintenance methodology for water infrastructure and freeboard in containment structures. • The water release strategy including details of release infrastructure, trigger levels for commencing and ceasing releases and release monitoring requirements. • A description of the water balance model including major water inflow and outflow mechanisms details, water balance model development (details of calibration of runoff parameters, key input assumptions) and water balance forecast results. • A program for the monitoring and review of the Water Management Plan’s effectiveness. • Corrective actions and contingency procedures for emergencies. • Assignment of responsibility for water management plan actions.

Project Matter	Commitment
<p>Surface water (cont.)</p>	<p>A surface water quality monitoring program will be implemented for the Project. Monitoring will include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • monitoring of surface water quality in Banana Creek, Dawson River, and at the controlled release location; • monitoring of mine water dam water quality; • monitoring of sediment dam water quality; and • monitoring the quality of surface runoff and seepage from waste rock emplacements (including any rehabilitated areas). <p>The monitoring locations, parameters and frequency will be detailed in the Water Management Plan. Water quality monitoring will be undertaken using a combination of laboratory and <i>in situ</i> sampling and in accordance with the Queensland ‘Monitoring and Sampling Manual’ (DES, 2018c).</p> <p>The mine water management system will operate in accordance with EA release conditions and in-stream trigger levels aligned with the WQOs in the ‘Environmental Protection (Water and Wetland Biodiversity) Policy, 2019.</p> <p>A Receiving Environment Monitoring Program (REMP) will be prepared and implemented for the Project in accordance with the ‘Receiving Environment Monitoring Program Guideline’ (DES, 2014a). The REMP design document will include:</p> <ul style="list-style-type: none"> • the environmental values to be enhanced or protected for receiving waters potentially affected by mine water releases; • measurable indicators associated with the environmental values (e.g. physical, chemical, or biological indicators) and the WQOs for these indicators; • suitable test sites within the receiving waters that are potentially impacted by releases; • suitable control sites where a background or reference condition can be established; • a description of the frequency and timing of sampling; and • how the condition of, and impacts to, environmental values will be assessed. <p>REMP monitoring will be undertaken biannually at a minimum and will be undertaken to account for seasonal variability.</p> <p>An annual review of surface water quality trends will be conducted by a suitably qualified person or persons. The review will assess the change in surface water quality over time compared to historical trends and impact assessment predictions.</p> <p>To assist in maintaining the current viability of the Benleith Water Scheme, where land in the scheme is acquired for the Project, the Project will:</p> <ul style="list-style-type: none"> • where feasible, continue participation in the scheme for the relevant land as if the land had not been acquired.

Project Matter	Commitment
<p>Surface water (cont.)</p>	<p>The risk associated with the accidental mobilisation of contaminants on site will be proactively and reactively managed through the following measures:</p> <ul style="list-style-type: none"> • hazardous chemicals and dangerous goods will be stored in bunded storage areas within the MIA with spill clean-up kits located in close proximity, in accordance with relevant Australian Standards; • transfers of fuels and chemicals within the MLA will be controlled and managed in accordance with Standard Operating Procedures developed for the Project to minimise the risk of spillage outside bunded areas; and • wastewater from wash down areas will be directed through oil and grease separators before being transferred to mine water storages; • any contaminated material/major spillage of stored material in bunded areas will be collected and transported offsite by a licensed waste collection agency; and • any significant leakage/spillage events will be reported immediately and the appropriate clean-up operations will be implemented. <p>Appropriate procedures, containment and spill control measures will be implemented at suitable locations where the transportation and loading, as well as storage of hazardous and/or dangerous materials occurs onsite. The design and management of all required fuels and hydrocarbons will ensure there are effective means of secondary containment to prevent or minimise releases to the environment from any fuel and oil storage onsite.</p>
<p>Groundwater</p>	<p>The existing groundwater monitoring program will continue to be monitored throughout the life of the Project. Exceptions to this will include existing bores within the disturbance footprint (i.e. P-WVWP4 and POB2) where monitoring will be maintained for pre-mining baseline data only. Additional shallow alluvial bores have also been proposed:</p> <ul style="list-style-type: none"> • one paired with the existing bore P-OB1; • one near the HES wetland; and • one to the south or south-east the Project site near to Banana Creek. <p>Groundwater level and quality monitoring locations, parameters and frequency will be detailed in the Water Management Plan. The Water Management Plan is described in the commitments for surface water management above.</p> <p>Periodic water level monitoring will be conducted at private landholder bores in the vicinity of the Project during the operational life of the mine to confirm predicted levels, where access is approved by the landholder. Mitigation measures will be adaptively developed in the event that monitoring and/or subsequent investigations from monitoring conclusively confirm that drawdown impacts on an existing groundwater supply user are due to the Project.</p> <p>Periodic water quality sampling will be conducted from representative in-pit sumps to allow for comparisons with groundwater quality sampling conducted in the surrounding groundwater monitoring network.</p> <p>Groundwater quality triggers will be developed consistent with the guideline 'Using monitoring data to assess groundwater quality and potential environmental impacts' (DSITI, 2017). Consistent with the DSITI (2017) guidelines, triggers will be established for each groundwater unit potentially impacted by the Project (being alluvium and the Permian coal measures) in consideration of the 'Water Plan (Fitzroy Basin) 2011' WQOs, ANZECC (2000[2018]) criteria and site-specific conditions. The groundwater quality monitoring triggers will be detailed in the REMP. The REMP is described in the commitments for surface water management above.</p>

Project Matter	Commitment
<p>Groundwater (cont.)</p>	<p>Changes in groundwater levels at the site bores will be compared to predicted groundwater trends to evaluate any deviations from the predicted trends. A review of groundwater levels will be assessed each year by a suitably qualified person to verify any changes from historical trends.</p>
	<p>An annual monitoring report will be prepared and submitted each year to the Queensland Government for the annual return period consistent with contemporary EA reporting requirements for relevant groundwater datasets.</p>
	<p>The numerical groundwater model will be reviewed and, if necessary, updated in accordance with the guideline, 'Underground Water Impact Reports and Final Reports' (DES, 2017).</p>
	<p>Groundwater pit inflow will be monitored during the open cut mining operational phase.</p>
	<p>An annual review of the Water Management Plan will be undertaken. The annual review will consider the results of groundwater monitoring and management measures and the development of mining activities. The review will assess the change in groundwater quality over time compared to historical trends and impact assessment predictions. The Water Management Plan will be updated pending the outcomes of the review or updates/changes in legislative requirements.</p>
<p>Flooding and regulated dams</p>	<p>Erosion protection works will be conducted, such as rock mulching, and monitoring of the areas identified as having localised increases in peak flood velocity near the north-west extent of the out-of-pit WRE landform. Erosion protection works and floodplain vegetation establishment to prevent localised scouring and degradation of the area identified with increases in peak flood velocity. Monitoring is proposed to observe the performance of the erosion protection works following large flood events.</p>
	<p>Post-mining, the final landform design will include a low earthen bund on the south-western corner of the final void that will act as a permanent feature of the landscape and will provide PMF design event protection to the final void.</p>
	<p>Hazardous materials will be stored at the infrastructure areas at the eastern extent of the MLA boundary, which maintains Probable Maximum Flood (PMF) immunity. Any storage containers that hold hazardous materials will be secured in line with relevant Australian Standards to prevent the removal of the containers from the site by a flood event.</p>
	<p>Monitoring will be conducted in the areas near the north-western extent of the northern WRE, that may have localised contact with flood water. Where erosion protection works are required, monitoring will be conducted to assess the effectiveness of such works following flood events.</p>
	<p>All mine water dams, mine infrastructure, access roads and haul roads will be located 10% AEP design event flood level.</p>
	<p>Mine water dams will be used to collect / store water which has interacted with mining activities consistent with the Mine Affected Water definition from the 'Model Mining Conditions' (DES, 2017a).</p>
	<p>The proposed dams will be constructed progressively, in alignment with the mining pit progression</p>

Project Matter	Commitment
Flooding and regulated dams (cont.)	Aerial imagery of the river channels will be obtained (possibly via drone or plane) prior to the commencement of construction and immediately following each flood that encroaches the final landform. The aerial imagery to extend a distance of 5 km along the watercourse upstream and downstream of the Banana Creek confluence and about 5 km of Banana Creek. The purpose of collecting the imagery would be to define the geomorphic changes that occur (naturally or otherwise) along the reach for further assessment and evaluation by a suitably qualified person if required.
Regulated structures	<p>The preliminary consequence category assessment of water management infrastructure conducted in accordance with the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures' (DES, 2016a) will be reviewed and revised once the engineering and design of the water infrastructure is finalised.</p> <p>All water storage dams and structures will be designed, constructed and managed in accordance with 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures' (DEHP, 2016a) and the guideline 'Structures which are dams or levees constructed as part of environmentally relevant activities' (DES, 2019a).</p> <p>Any structures determined to be regulated for 'failure to contain overtopping' following detailed design will be designed and constructed with wet season containment in accordance with the design criteria requirements outlined in the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures' (DES, 2016a).</p> <p>Structures to be regulated for 'dam break' will be designed and constructed with spillway capacity in accordance with the design criteria requirements outlined in the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures' (DES, 2016a).</p> <p>Water storages will be operated as an integrated water management system. That is, water will be transferred between each water storage as required to reduce the risk of failure.</p> <p>A design plan will be prepared for regulated structures to outline how all identified consequence scenarios are addressed in the design and operation of the regulated structures. The design plan will include:</p> <ul style="list-style-type: none"> • a description of the physical dimensions of the regulated structure; • the materials and standards to be used for construction of the regulated structure; • the criteria to be used for operating the regulated structure; • investigation and design reports, plans and specifications; and • planned decommissioning and rehabilitation outcomes. <p>Regulated structures will be certified by suitably qualified and experienced persons, in accordance the requirements prescribed in the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures' (DES, 2016a).</p> <p>Inspections will be carried out for each regulated dam, by a suitably qualified and experienced person, to assess the condition and adequacy of the dams. An inspection report will be prepared that contains details of the assessment and any recommended actions.</p>

Project Matter	Commitment
<p>Flora and fauna</p>	<p>Vegetation clearance protocols will be implemented to minimise and mitigate impacts on flora and fauna habitats and vegetation communities. Clearing activities will be undertaken sequentially and in accordance with the 'Permit to Disturb' process whereby any disturbance that involves individual trees (dead or alive), vegetation and soil disturbance will require an approval from the Environmental Officer. This protocol will ensure the area of vegetation and habitat to be cleared is that which is required for the safe construction and operation of the Project.</p>
	<p>Inspection of areas to be cleared will be undertaken prior to clearing to confirm whether any animal breeding places for threatened or near threatened species are present or likely to be present. If breeding places for threatened or near threatened species are present or likely to be present, the Project will engage a spotter/catcher to manage the potential impacts to fauna during the clearing activities.</p>
	<p>A buffer of 500 m along the Dawson River and a 200 m buffer along the Banana Creek will be retained. Significant earthworks and clearing will be avoided within these buffer areas. Minor surface disturbance, such as pipelines, tracks and monitoring infrastructure, may occur within these buffer areas.</p>
	<p>A Species Management Program will be developed and implemented during construction and mining operations. The purpose of this plan is to manage and minimise the risk of impacts on animals and animal breeding places protected under the <i>Nature Conservation (Animals) Regulation 2020</i>. The Species Management Program will be developed to address the key threatened processes identified for the species relevant to the Project.</p>
	<p>All road crossings, and any watercourse crossings for linear infrastructure, will be designed in consideration of the 'Accepted development requirements for operational work that is constructing or raising waterway barrier works' (DAF, 2018) to ensure that fish passage is maintained throughout these systems.</p>
	<p>Significant Impacts to MNES will be offset consistent with the Biodiversity Offsets Strategy. Based on the results of the MNES significant impact assessments, the proponent will provide offsets for impacts to the following MNES: <i>Xerothamnella herbacea</i> and <i>Denisonia maculata</i> (Ornamental Snake).</p> <p>The proponent will provide offsets for impacts to the following MSES: Connectivity area. Offset areas identified to offset significant impacts on the Ornamental Snake (<i>Denisonia maculata</i>) provide offsets for Project impacts to approximately 10 ha of connectivity areas under the EO Act. The proponent will either provide a direct offset in relation to the significant impacts on connectivity areas or will provide a financial contribution in place of land-based offsets in accordance with Queensland policy.</p>

Project Matter	Commitment
<p>Biosecurity</p>	<p>A Weed and Pest Management Plan will be prepared and implemented as part of the Project and will include reasonable and practicable measures to mitigate each identified biosecurity risk. Control programs included in the Pest Management Plan will be prepared in accordance with methods recommended by DAF.</p> <p>The Weed and Pest Management Plan will address faunal pest risks by:</p> <ul style="list-style-type: none"> • establishing vegetation clearance requirements and procedures; • ensuring that potential food and water sources are managed to reduce pest abundance; and • ensuring that any control measures and management strategies adhere to accepted animal welfare requirements. <p>The Weed and Pest Management Plan will include weed management controls that address:</p> <ul style="list-style-type: none"> • Reporting: any declared weeds will be identified, and dealt with pursuant to the Biosecurity Act (Qld); • Vehicle wash-down requirements: vehicles may require wash-down prior to entering the Project area if arriving from a known high-risk area to avoid the introduction of new weed species; • Staff training: staff will be notified of the major weed species in the locality, and, where necessary, will be required to report any identified weed infestations to their supervisors; • Weed control program: weeds will be controlled in accordance with DAF recommended methods specific to that species. Herbicides will be used in accordance with their label requirements and only on those species that are capable of being managed effectively by that particular herbicide. This capability evaluation will take into consideration factors specific to the Project, such as weather, surrounding vegetation and watercourses, and the potential for off-target loss; • Prioritisation of treatment of weed species: for those weed species that are identified as WoNS, and/or are restricted under the Biosecurity Act (Qld), will be treated as a matter of priority; and • Periodic surveys: information on weed composition and distributions on-site will be gathered periodically throughout the life of the Project. <p>The Weed and Pest Management Plan monitoring program activities will include:</p> <ul style="list-style-type: none"> • Regular weed monitoring: monitoring will occur every 18 months to identify any weeds not previously identified in the region. • Routine monitoring: areas identified as higher risk (e.g. areas that are known to regularly exhibit weeds or are at high risk of weed infestations) will be monitored at the start of each season, especially after significant rainfall; and • Opportunistic monitoring: any weeds observed during normal activities are to be recorded and managed accordingly. <p>The Project will implement the following practices to reduce the risk of mosquito outbreaks:</p> <ul style="list-style-type: none"> • general protection measures will be implemented to reduce the likelihood of mosquito bites (e.g. long sleeves on shirts, insect repellent); • potential breeding sites for mosquitoes will be eliminated by identifying and minimising the potential for water ponding to occur; and • should employees begin to show symptoms associated with vector-borne diseases, they will be monitored and taken for treatment, and details of the incident will be reported to appropriate authorities.

Project Matter	Commitment
<p>Land and Visual Amenity</p>	<p>Any disturbance of land will be undertaken in accordance with the following management protocols and measures:</p> <ul style="list-style-type: none"> • a land disturbance permit system to control and limit land clearing to the minimum amount required for the safe operation of the Project; • progressive rehabilitation of landforms to limit the total area of disturbance at any point in time; • implementation of a Water Management Plan that will achieve successful water management and diversion of overland flow/run-off around disturbed areas; and • development and implementation of a topsoil management plan to direct removal, replacement and stockpiling and promote direct placement of topsoil where possible to preserve the seed bank and reduce erosion.
	<p>General topsoil resource management practices will be implemented, including stripping and either immediate reuse for rehabilitation purposes, or stockpiling for subsequent use. A Topsoil Management Plan will be developed to:</p> <ul style="list-style-type: none"> • ensure the full recovery of usable soil reserves prior to mining operations; • manage soil reserves to maintain their viability; and • advise on effective soil amelioration procedures to maximise the revegetation benefits associated with topsoil resources.
	<p>The rehabilitated landform with a PMLU of improved pasture for grazing will target the achievement at least Class 4 agricultural land suitability (i.e. marginal land with severe limitations), similar to the pre-mining classification</p>
	<p>Management measures will be used to prevent or reduce the risk of land degradation or contamination of land and include the following:</p> <ul style="list-style-type: none"> • all unexpected contamination will be remediated and validated under supervision of a suitably qualified person in accordance with an Emergency Response Plan predefined for all hazardous materials stored on-site; • a contaminated land register will be maintained on-site; detailing any contamination events, subsequent location and remediation protocols issued; • chemical and hydrocarbon storage areas will be designed and bunded in accordance with 'AS 1940:2017, The storage and handling of flammable and combustible liquids' (Standards Australia, 2017); • provision of training to staff on the prevention of spills and the use of spill kits; • a register of spill kits will be maintained, and all kits will be inspected for completeness at least quarterly; • sediment dams will be installed and adhere to the design parameters of the 'Manual for assessing consequence categories and hydraulic performance of structures' (DES, 2016a); • if a STP is constructed, the STP will be designed to cater for the maximum number of personnel that can be accommodated on-site at any one time, and in accordance with the recommendations contained in Appendix Q, Land-Based Effluent Disposal Assessment Report and MEDLI modelling; • explosives storage will be managed in accordance with 'AS 2187:2006, Explosives—Storage, transport and use' (Standards Australia, 2006); • waste products including oil and other chemicals will be stored and disposed of according to the relevant material data safety sheets to minimise contamination risk; and • waste management strategies to reduce the risk of land contamination from waste generated during the life of the Project, including waste associated with the STP, will be developed.

Project Matter	Commitment
Land and Visual Amenity (cont.)	<p>The following actions and measures will be implemented to further minimise the potential visual impacts of the Project:</p> <ul style="list-style-type: none"> • the revegetation of the out-of-pit overburden dumps after rehabilitation, in order to reduce contrast between altered landforms and the unaffected surrounding landscape; • the use of vegetation as a visual buffer of the MIA view from the Moura-Baralaba Road realignment will reduce the visual impact to the local community; • design of the overburden dumps to have a final landform that does not contrast significantly with the existing topography; • placement, configuration and direction of lighting to reduce light emissions during the operational phase of the Project, in accordance with AS 4282:1997 'Control of the obtrusive effects of outdoor lighting' (Standards Australia, 1997a); and • neutral tones will be used in the cladding of infrastructure to blend in with the surrounding environment.
	<p>Unless otherwise agreed with landowners, all on-lease infrastructure disturbance will be rehabilitated to a safe and stable landform.</p>
	<p>Blast fume management at the Project will be undertaken in accordance with contemporary mining practice and DoR requirements.</p>
	<p>The catchments reporting to the sediment dams will be progressively rehabilitated over the Project life to reduce sediment runoff generation further improving the performance of the sediment dams.</p>
	<p>Hazardous material storage and handling measures and standards will be implemented.</p>

Project Matter	Commitment
<p>Land and Visual Amenity (cont.)</p>	<p>Erosion and sediment controls will include the following:</p> <ul style="list-style-type: none"> • topsoiled areas will be deep ripped to reduce compaction from heavy machinery, encourage infiltration of water and prevent erosion. Areas will be ripped along the contour to reduce the velocity of run-off water down the slope. Ripping depths will vary depending on the type of spoil material, depth of topsoil and equipment used for rehabilitation operations; • topsoil within each SMU will be stripped to the depths determined in the Soils and Land Assessment (Appendix K); • where required, topsoil stockpiles will be constructed to less than 3 m high and contoured to encourage water drainage; • where required, seeding of topsoil will take place as soon as possible after placement onto rehabilitated areas to assist in preventing erosion; • topsoil stockpiles will be placed away from drainage areas, roads, machinery, transport corridors and stock grazing areas; • a topsoil inventory will be maintained for the life of the Project which will account for the volumes and locations of topsoil to be progressively stripped, stockpiled and reapplied; • preservation of vegetation around drainage lines and riparian zones to reduce the exposure of the B horizon if excavation is necessary; • the strategic application of vegetation debris to rehabilitation areas; • use of upslope diversion drains to reduce run-off from undisturbed areas onto disturbed areas; • the use of downslope collection drains to divert surface water to sediment dams (e.g. mulch berms, sediment ponds and drop inlet protection) to contain sediment-laden run-off from disturbed areas; and • the use of sediment fences and filters to retain and filter suspended solids. <p>Installed erosion and sediment control structures will not be removed until disturbed areas have been stabilised.</p> <hr/> <p>Post-mining, rehabilitated waste rock dumps which have a PMLU objective of grazing will target the achievement of a land use capability of at least class 4 agricultural land suitability (marginal land with severe limitations). Revegetation activities will utilise flora species consistent with the surrounding pre-disturbed land.</p> <p>To mitigate impacts to surrounding land uses, management measures will include:</p> <ul style="list-style-type: none"> • Management of fugitive dust emissions through: regular watering of haul roads, coal stockpile watering, early rehabilitation of waste rock dumps and/or temporary revegetation to minimise the extent of bare ground, and continuous monitoring of weather conditions to ensure that operations are adjusted during periods of adverse weather. • Regular visual checking of light spill to ensure that fixed and mobile lights are located and shielded sufficiently to mitigate excessive light spill. • Planning and consultation with neighbours to ensure that all operations that may result in herbicide, pesticide and fertiliser drift are conducted in a manner that reduces the potential for impact to neighbouring properties, regardless of the organic certification status of those properties. • Monitoring of blast vibration and airblast overpressure to ensure that predicted levels of both parameters are achieved. • Monitoring of all blasts to identify any occurrences of blast fume, and where warranted to undertake appropriate investigations and mitigating actions to limit adverse impact from blast fume.

Project Matter	Commitment
<p>Air quality</p>	<p>Mitigation measures to reduce the impacts on nearby sensitive receptors will include:</p> <ul style="list-style-type: none"> • watering and regular maintenance of haul roads; • watering of other trafficked areas; • use of gravel, sheeting or surfactants on haul roads; • where required and practical, use water sprays on the equipment; • drilling and blasting operations to include properly fitting and working shrouds, dust extraction for drill rigs and blasting during daytime hours only; • personnel training; • monitoring and modifying mining operations as required in order to achieve compliance with applicable air quality objectives at the nearest privately-owned sensitive receiver(s). • material drop heights during loading and unloading are to be reduced as far as practicable; • blasting controls put in place to minimise dust blowing towards sensitive receptors; and • minimising exposed areas as much as practicable by rehabilitation and revegetating as soon as possible after activity has ceased. <p>The following controls will continue to be implemented at the TLO:</p> <ul style="list-style-type: none"> • use of water sprays on coal stockpiles to minimise dozing emissions and wind erosion; • use of water sprays at the unloading hopper; • use of water sprays while loading stockpiles; • use of a reclaim tunnel for the coal stockpile; • use of water sprays at conveyor transfer points; and • use of sealed road. <p>Odour and fumes potentially generated by Project activities will be subject to the following management strategies:</p> <ul style="list-style-type: none"> • If required, the management of spontaneous combustion through personnel inductions, the use of designated dumping areas and dumping parameters for rejects, handling procedures where heat is being generated and the use of barricades to prevent access. • All blasting events will be video-captured and visually monitored. Records will be maintained for the generation of NOx fume. Should NOx fume generation be identified as a risk, the following measures are to be implemented: <ul style="list-style-type: none"> ○ review of blast design parameters to minimise risk of fume; ○ market assessment for lower fume potential blasting agents; ○ blasting restrictions when wind conditions are not favourable; and • Housekeeping checklists will include an assessment of nuisance fume in the vicinity of diesel/fuel storage areas, sewerage treatment plants and water treatment plants.

Project Matter	Commitment
<p>Air quality (cont.)</p>	<p>A draft Air Quality Management Plan has been developed for the Project and includes:</p> <ul style="list-style-type: none"> • details of the mitigation and management measures that are to be implemented at the site to minimise dust and other air emissions from the mine; • requirements for monitoring weather conditions and the impacts of mine operations on ambient air quality; • remedial actions in the event adverse air quality conditions are predicted or detected, complaints are received, exceedances of criteria occur, or other trigger levels are breached; and • roles and responsibilities for implementation, monitoring and review of the Air Quality Management Plan. <p>An Air Quality Monitoring Program, as described in the draft Air Quality Management Plan, to be implemented including:</p> <ul style="list-style-type: none"> • monitoring of atmospheric conditions at the Project, including temperature, relative humidity, wind speed and wind direction; • establishing a monitoring site or sites that meet(s) the requirements of ‘AS3580.14-2014 Methods for sampling and analysis of ambient air quality - Meteorological monitoring for ambient air quality monitoring applications’; • monitoring of air quality levels on a regular basis, and at times when the progressive operations would be likely to increase particulate levels within the surrounding environment; • monitoring of PM₁₀ concentrations at selected sensitive receptors using an Australian Standard method such as ‘AS 3580.9.9-2017 Determination of suspended particulate matter – PM₁₀ low volume sampler – Gravimetric method’ or ‘AS/NZS 3580.9.11-2022 Determination of suspended particulate matter – PM₁₀ beta attenuation monitors’; • should a non-frivolous complaint regarding dust nuisance be received, dust deposition monitoring will be undertaken at a site representative of the complainant’s residence, according to ‘AS/NZS 3580.10.1 2016 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method’. Such monitoring will be undertaken for a period of 12 months and the results reviewed to determine the extent of future monitoring; and • should a non-frivolous complaint regarding health concerns about dust be received, PM₁₀ concentrations will be monitored at a site representative of the complainant’s residence using an Australian Standard method such as ‘AS 3580.9.9-2017 Determination of suspended particulate matter – PM₁₀ low volume sampler – Gravimetric method’. Such monitoring will be undertaken (at least) every sixth day, over (at least) the three months of winter and reviewed to determine the extent of future monitoring. <p>Road trains travelling from the Project site to the TLO facility, will travel with a covered load.</p>

Project Matter	Commitment
<p>Noise and Vibration</p>	<p>Noise and vibration management and mitigation measures are proposed for the Project and will include the following:</p> <ul style="list-style-type: none"> • there will be implementation of proactive and reactive noise control measures as required to ensure compliance with applicable noise limits at the nearest receptors; • if required, mining operations will be modified by reducing the intensity of particular operations or relocating particular operations in adverse conditions; • carrying out of routine maintenance of mining equipment will be undertaken; • installing attenuation measures for onsite haul trucks and D11T Dozers as required to ensure compliance with objectives over the mine life; • if noise monitoring indicates exceedances at receptors under adverse meteorological conditions, mobile plant items operating in the vicinity of receptors that have predicted noise levels close to the Project’s objective could be treated with sound suppression equipment as required to achieve compliance with the relevant noise criteria; and • If required, further noise mitigation strategies will include the construction of additional bund walls. Bunds will be of sufficient height and in a location which provides the required level of shielding to the loudest equipment (e.g. haul trucks, dozers, excavators, loaders). <p>A Noise and Blasting Management Plan will be prepared and detail the management, mitigation and monitoring (auditing) measures that will be implemented for the control of noise, vibration and blasting during mining activities. The proposed Noise and Blast Management Plan will include the following:</p> <ul style="list-style-type: none"> • roles and responsibilities for employees for the implementation of the plan; • relevant limits and criteria for noise, vibration and blast overpressure and blast vibration; • identification of sensitive receptors; • activities with potential to generate noise, vibration and blast emissions; • noise and blast mitigation and management measures; • noise and blast monitoring; • review and auditing of environmental performance; • management and reporting of incidents, complaints and non-compliances; and • additional remedial actions for noise control in the event of complaints being received, exceedances of criteria being recorded or other trigger levels being breached (e.g. management of mining equipment locations, such as operating at a lower elevation or shielded area at night).

Project Matter	Commitment
<p>Noise and Vibration (cont.)</p>	<p>A noise monitoring program will be developed and implemented to conduct occasional noise validation monitoring at receptors of interest and monitoring on a complaint basis. The noise monitoring program will include the following:</p> <ul style="list-style-type: none"> • monitoring of atmospheric conditions at the Project, including those of temperature, relative humidity, wind speed and wind direction; • continuous performance noise monitoring at the worst affected sensitive receptors to the north and to the south of the mine. This monitoring will advise on requirements to reduce noise levels in real-time at the mine; • attended noise monitoring conducted on a six-monthly basis at sites most affected by the mine operations. This monitoring will be used to confirm compliance with EA noise limits; and • all noise monitoring will be conducted in accordance with relevant acoustic guidelines and standards, such as the latest versions of AS 1055 (2018a) and the 'Noise measurement manual' (DES, 2020c). <p>The Project will develop a blast monitoring program to monitor the airblast overpressure and blast vibration levels during all blast events to ensure blasting criteria are met at all sensitive receptors. The proposed blast monitoring program will consider the following:</p> <ul style="list-style-type: none"> • predicted vibration levels will be calculated prior to each blast, and the quantity of the explosives designed to be initiated simultaneously will be modified as required (i.e. reduced to ensure blast performance criteria are met at all sensitive receptors); • blast monitors should be setup at the nearest receptor/s to monitor airblast and vibration during blasts. • mitigation measures will be in place as required; • a record of blast designs will be kept; and • a record of environmental observations before and after blasting will be maintained. <p>Blast exclusion zones will be established during all blasts in accordance with relevant industry standards.</p>
<p>Transport</p>	<p>The design of the new section of public road will be consistent with the upgraded sections of Moura-Baralaba Road to the north and south of the MLA for the Baralaba North Mine haul route. The sealed carriageway will be a minimum of 10 m wide, with two 3.5 m wide lanes, a 1 m wide median strip and two 1 m wide shoulders. The detailed designs for the road realignment will be prepared in consultation with Banana Shire Council and will include intersections to maintain access to and from the MLA.</p> <p>The realignment of Moura-Baralaba Road will be subject to separate approval from Banana Shire Council under the <i>Planning Act 2016</i>.</p> <p>The Project will work with the required authorities to provide safe public traffic movement for road vehicles to ensure minimum disruption to existing patterns of movements while the road is being constructed.</p>

Project Matter	Commitment
<p>Transport (cont.)</p>	<p>The intersections of the proposed mine access roads with the realigned Moura-Baralaba Road will be designed to meet rural conditions and cater for current and future traffic volumes. The intersections will be designed and constructed in accordance with 'Guide to Road Design Part 4A: Unsignalised and Signalised Intersections' (Austroads, 2010a).</p> <p>Roadside safety including the potential location of barriers, road furniture and signage, utilities and lighting will be designed and constructed with guidance of 'Guide to Road Design Part 5: Drainage – General and Hydrology Considerations' (Austroads, 2013a), 'Guide to Road Design Part 5A: Drainage – Road Surface, Networks, Basins and Subsurface' (Austroads, 2013b), 'Guide to Road Design Part 5B: Drainage – Open Channels, Culverts and Floodways' (Austroads 2013c), and 'Guide to Road Design Part 6: Roadside Design, Safety and Barriers' (Austroads, 2010b).</p> <p>The location of line marking (including stop lines, give way lines, lane lines, turning lines, pavement arrows and symbols) will be designed and constructed to 'AS1742.2-2009 Manual of uniform traffic control devices – Part 2 Traffic control devices for general use' (Standards Australia, 2009) with guidance of 'Guide to traffic management part 10: traffic control and communication devices' (Austroads, 2019).</p> <p>The Project will comply with all requirements for the transport of dangerous goods and hazardous materials by both road and rail, including requirements under the Transport Operations (Road Use Management – Dangerous Goods) Regulation 2008.</p>

Project Matter	Commitment
Waste Management	Waste will be managed in consideration to a waste management hierarchy.
	A Mineral Waste Management Plan will be prepared and implemented that incorporates the following: <ul style="list-style-type: none"> • appropriate programming (in frequency and spatial distribution) of sampling and laboratory characterisation of mineral waste to validate the characterisations already undertaken; • documentation of field and laboratory testing requirements for material characterisation; • utilisation of material characterisation data to classify waste rock zones and documentation of material placement requirements, particularly with respect to coal reject materials; • ex-situ spoil dump design, including preferred selective placement for differing material types; • cross-references to rehabilitation and closure plans to ensure knowledge of rehabilitation and closure requirements, including rehabilitation monitoring (erosion, groundwater and surface water etc.) to ensure no off-site impacts arise; and • continual review of the program to ensure the ongoing effectiveness of the Mineral Waste Management Plan.
	A Non-Mineral Waste Management Plan will be developed and implemented for the Project. This plan will incorporate the following elements: <ul style="list-style-type: none"> • waste will be segregated into general waste, various recyclable waste and regulated waste; • general waste will be collected in clearly designated bins; • waste oils, chemicals, batteries and other hazardous and/or regulated substances will be stored in bunded areas or on bunded pallets within the waste collection area; • recyclable waste will be separated and stored for collection into streams, including paper and cardboard, metals and recyclable plastics; • all used tyres will be managed in accordance with the operational policy 'Disposal and storage of scrap tyres at mine sites' (DES 2014). • different forms of waste (e.g. metals, paper, oils, batteries, general waste, etc.) will be stored on-site according to waste stream. The design of the waste collection facility will consider public health, hygiene and safety standards. For example, flammable material or combustible liquid wastes will be stored in facilities designed to meet 'AS 1940:2017, The Storage and Handling of Flammable and Combustible Liquids'; • bins located within offices and workshops will be appropriately labelled to avoid cross-contamination and ensure separation of different waste streams. Bins will be emptied regularly to keep vermin and pest numbers to a minimum; and • regulated and/or hazardous waste will be stored in a separate storage area to ensure that the potential for environmental harm is minimised.
	Energy usage will be limited to only that which is essential for the Project to function. Energy use will be reviewed for efficiency measures, wherever practicable.
	All general waste will be collected in front-lift bins for weekly collection by a licensed waste management contractor and disposed of to the Banana Shire Council's Trap Gully landfill until it reaches capacity, then to a new upgraded landfill facility.
	Regulated wastes, including waste oils, oil filters, waste grease, paints and various hydrocarbon contaminated materials will be handled and disposed of in accordance with the properties of the specific materials.

Project Matter	Commitment
Waste Management (cont.)	<p>If an STP is installed and utilised, the associated irrigation system will be managed in accordance with the recommendations from AS/NZS 1547:2012 as appropriate, with consideration of the following parameters:</p> <ul style="list-style-type: none"> • the irrigation area will be a designated disposal area with clearly delineated boundaries and access restrictions; • the irrigation system will be designed to distribute effluent evenly in the designated area with control of droplet size, throw and plume height to mitigate aerosol dispersion; • buffer distances in accordance with the Technical guideline for the disposal of effluent using irrigation (Tennakoon and Ramsay, 2020) will be maintained; • the irrigation area pastures will be maintained by mowing and removal of grass clippings; and • soil monitoring will be undertaken at an appropriate frequency.
Cultural Heritage	<p>The Project will be constructed and operated in accordance with the existing CHMP entered into with the former registered native title claimants for the Project area (the Gangulu People [QUD6144/98]).</p> <p>The Project will liaise with the Gangulu People to arrange for the nomination of a technical adviser, who will assist in the conduct of cultural heritage assessments.</p> <p>An understanding of Indigenous cultural heritage values and legal obligations within the Project workplace will be promoted through the inclusion of Indigenous cultural heritage awareness information in employee/contractor induction programs.</p> <p>Site induction material prepared for Project personnel will include information on the potential occurrence of non-Indigenous cultural heritage sites and the actions that are to be taken if a potential site is found.</p> <p>Personnel or contractors of the Project will be informed of their obligations under section 89 of the <i>Queensland Heritage Act 1992</i> to report to the DES any archaeological items (as defined under the Act) that may constitute an important source of information about an aspect of the history of Queensland.</p> <p>An Incidental Finds Procedure will be implemented in the event that a potential site of non-Indigenous cultural heritage significance is identified within the Project area that has not previously been recorded.</p> <p>The Project will endeavour to provide a museum, which has an appropriate collection policy for this object type (for example the Telstra Museum Brisbane or the Cardwell Bush Telegraph Heritage Centre) the opportunity to collect a diagnostic sample of the material associated with the historical telephone line.</p>

Project Matter	Commitment
<p>Social and Economic</p>	<p>The recruitment of workers from local and regional communities will be prioritised, and employees will be encouraged to live within local towns. The FIFO workforce will be minimised.</p>
	<p>The following management plans will be finalised and implemented for the Project:</p> <ul style="list-style-type: none"> ● Community and Stakeholder Engagement Plan to facilitate engagement, consultation and collaboration with stakeholders. ● Workforce Management Plan to prioritise recruitment of workers from local and regional communities and workers who will live in regional communities, reduce the proportion of workers engaged in FIFO arrangements and support the health and wellbeing of the Project workforce. ● Housing and Accommodation Plan to provide strategies to meet the accommodation requirements of the Project and to monitor the impact that workforce influx has on the real estate market. ● Local Business and Industry Procurement Plan to maximise opportunities for local businesses to provide goods and services to the Project. ● Community Health and Wellbeing Plan to provide processes and strategies to avoid or mitigate adverse social impacts and capitalise on opportunities to improve the health and wellbeing of local and regional communities.
	<p>A healthy workplace will be promoted, and a Healthy Workforce Policy will be developed for the Project. The Healthy Workforce Policy will be prepared by the Project’s health and safety professionals and/or with guidance/assistance from external professionals prior to the commencement of construction.</p>
	<p>Staff with paramedical and/or first aid training will be employed to manage minor health issues on-site.</p>
	<p>An Emergency Response Plan will be further developed in consultation with emergency service providers. First response capabilities will be established from the commencement of construction.</p>
	<p>Local and district police and emergency services will be made aware of the Project’s development in advance of construction and operation and will be provided with the final Emergency Response Procedure developed in consultation with them.</p>
	<p>Emergency training and familiarisation of the mine site will be conducted in consultation with police and emergency services.</p>
	<p>A Code of Conduct will be developed prior to Project commencement to inform personnel of the behaviour expected at work, when travelling to and from work, in public places (e.g. town centres, parks and hotels), and within the accommodation camp. Compliance with the Code of Conduct will be required for all Project personnel (both construction and operation). Workers staying in the Baralaba accommodation camp will be bound by the facilities’ Code of Conduct.</p>
	<p>The Proponent will facilitate annual Project emergency simulation training for local health and emergency services.</p>
	<p>The Proponent will continue to maintain the public haul road impacted by the Project from the Baralaba North mine site to the TLO and then the Baralaba South mine site to the TLO once fully transitioned.</p>
<p>The Proponent will continue to implement the Community Sponsorship and Donations Program.</p>	

Project Matter	Commitment
Social and Economic (cont.)	<p>The Proponent will contribute to the Benleith Water Scheme up to \$100,000 (subject to a detailed assessment/discussions with the scheme manager).</p> <p>The Proponent will incentivise Baralaba South employees to reside locally if there is available accommodation:</p> <ul style="list-style-type: none"> • develop ‘welcome packs’ to help relocating employees integrate into local communities • subsidise employee local housing purchase • subsidise employee local rental payments; and • assist with relocation costs.
Hazards, Risks and Safety	<p>The following processes and measures will be implemented in addition to expected and standard controls to reduce the risk of impacts on health, safety and the environment associated with the Project:</p> <ul style="list-style-type: none"> • Fatigue management/fitness for work, alcohol and drug testing and road safety awareness training to manage the increased risk of motor vehicle incidents. • Occupational Health and Safety performance to be closely monitored and assessed and, where required, individual issue specific risk assessments to be undertaken to identify fit-for-purpose safety initiatives. • Routine watering of haul roads, scheduling of blasting operations and reactive dust control measures to be utilised to manage dust impacts to sensitive receivers <p>Development and implementation of a Safety and Health Management System will be undertaken in accordance with the requirements of Queensland’s <i>Coal Mining Safety and Health Act 1999</i>, and Australian Standard ‘AS/NZS 4801 Occupational Health and Safety Management Systems’ (Standards Australia/Standards New Zealand Committee, 2001).</p> <p>The SHMS will document the standards, methods and procedures necessary to ensure mitigation of risks relevant to the stages of the Project and ensure legislative compliance. The SHMS will be applicable to all personnel who enter the site (i.e. Project workforce, contractors and visitors).</p> <p>A detailed hazard and opportunities assessment will be undertaken as part of the final planning process. The assessment will build upon the preliminary hazard and risk assessment and identify the principle hazards for management focus during each phase of the Project.</p>

Project Matter	Commitment
<p>Hazards, Risks and Safety (cont.)</p>	<p>Development and implementation of an Emergency Response Plan (ERP) for the Project, which will include the following:</p> <ul style="list-style-type: none"> • a site plan to manage incidents and analysis of emergency services resource needs which may include a designated site emergency response and rescue team; • training requirements for emergency response crews, including rescue, first aid, firefighting etc.; • communication protocols and emergency roles and responsibilities; • compulsory basic training in the use of fire extinguishers and cardiopulmonary resuscitation as a component of the industry required inductions to improve first aid response on-site; • post-emergency procedures, including recovery, debriefing, regulatory reporting and plan review; and • emergency simulations and drills. <p>Development of the ERP will include consultation with key external bodies potentially involved in emergency response relating to site activities.</p> <p>Evacuation muster points will be established specific to each work area on-site and site evacuation levels established. Flooding impacts will be considered during ERP development, as will potential accommodation village evacuation requirements.</p> <p>Monitoring of the effectiveness of the SHMS and environmental management system will be undertaken to ensure the effectiveness of the system. Audits of system implementation will also form a component of the monitoring program. Monitoring information will be provided for management team review, and corrective actions will be implemented as required. Corrective actions will include reviews of relevant policies, plans and procedures.</p> <p>All hazardous substances and dangerous goods will be stored and handled in accordance with the relevant standards, label instructions and material safety data sheets.</p> <p>Appropriate aprons and hardstands for substance transfer will be provided as will spill clean-up equipment and fire extinguishers.</p> <p>Storage of these materials will utilise secondary collection and storage such as banded pallets or self-banded shipping containers constructed and operated in accordance with relevant standards.</p> <p>The MIA and workshop will include a stormwater management system which incorporates oil/water separation systems to ensure potentially contaminated water is appropriately collected and disposed of off-site.</p>