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PEMBROKE

Olive Downs Coking Coal Project

Additional Information to the
Environmental Impact Statement

Section 22

Proponents Commitments

22 PROPONENTS COMMITMENTS

1. Provide an updated list of all commitments made in the draft EIS and any additional commitments made in the responses to the submissions or the preparation of the revised draft EIS.

Table 22-1 provides an updated list of all commitments made in the draft EIS and any further commitments made in the Additional Information to the EIS.

2. Provide a list of all MNES commitments made in the draft EIS and any additional MNES commitments made in the responses to the submissions within the MNES chapter.

Table 22-2 provides a list of all MNES commitments made in the draft EIS and any further commitments made in the Additional Information to the EIS.

Table 22-1
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Rehabilitation	The Project rehabilitation strategy has been prepared in consideration of the *Mineral and Energy Resources (Financial Provisioning) Bill 2018*, however, the final legislation and, importantly, the associated guidance material, was not available during preparation of this EIS to inform the preparation of a PRC Plan.
	A Plan of Operations would be prepared for the Project and would develop on the preliminary rehabilitation requirements described in Table H1 of the Proposed EA conditions (i.e. the rehabilitation goals, domains, objectives, performance indicators and completion criteria), in consultation with DES, and based on more detailed mine planning and scheduling information.
	The Project would be progressively rehabilitated to achieve the rehabilitation objectives established for each domain. The progress of the rehabilitation would be monitored against indicators, and ultimately against completion criteria to demonstrate successful rehabilitation of the Project. The rehabilitation goal for the Project requires rehabilitation of areas disturbed by mining to create a post-mining landform that is: • safe; • non-polluting; • stable; and • able to sustain a post-mining land use.
	Pembroke would prepare a Rehabilitation Monitoring Program for the Project which would be designed to track the progress of revegetation and to determine the requirement for intervention measures, such as alternate species or species mix, thinning to reduce the density of revegetated areas, or additional plantings in areas where vegetation establishment has been sub-optimal.
	The in-pit waste rock emplacement areas would be rehabilitated progressively as the mine develops. The mine plan includes fully backfilling Pits ODS1 ODS2, ODS4, ODS5, ODS6 and ODS9, as well as partial backfilling areas of Pits ODS3 and ODS7/ODS8. Similarly, the mine plan for the Willunga domain includes fully backfilling Pits WIL1, WIL2, WIL3 and WIL4 and partially backfilling Pit WIL5.
	Disturbance due to exploration activities in areas not scheduled or authorised to be mined within two years would be rehabilitated in accordance with provisions detailed in the *Code of Environmental Compliance for Exploration and Mineral Development Projects* (DEHP, 2013c).
	Permanent highwall emplacements would surround the final voids and isolate them from all flood events, up to and including a PMF event.
	Final voids would act as groundwater sinks into perpetuity, preventing the migration of potentially saline water into adjacent aquifers and watercourses.
	Final void highwalls would be fenced to prevent access and designed to remain stable in the long term, based on site specific geological data and geotechnical modelling.
	Final void water bodies would equilibrate well below the point at which they would spill to the surrounding environment.
	The conceptual post-mining land use for the Project is to reinstate land to: • agriculture (low intensity cattle grazing); • native vegetation (woodland); and • fauna habitat.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Rehabilitation (Cont.)	Sediment dams would be retained until the revegetated surface of the waste rock emplacements are stable and runoff water quality reflects runoff water quality from similar undisturbed areas, at which time these controls would be removed and the areas would be free-draining.
	All infrastructure associated with the Project would be assessed on an individual basis for possible removal or to be retained for future land owners. Where infrastructure is removed, the land would be re-contoured, topsoiled, ripped and seeded. All disturbed areas would be rehabilitated with an appropriate seed mix to enable revegetation.
	Remediation works would be undertaken to remove contaminated material, or rip, cap and topsoil inert areas. Areas would then be seeded with native grasses.
	The temporary flood levee in the north-east of the ODS domain would be removed or reshaped once the open cut is backfilled and rehabilitated in the northern areas to provide additional flood storage areas adjacent the Isaac River to reduce flood velocities and stream power. Similarly, the temporary flood levees in the south and south-west of the ODS domain adjacent Ripstone Creek would be removed or reshaped once the waste rock emplacements are rehabilitated.
	The temporary flood levee in the west of the Willunga domain would also be removed or reshaped once the Pit WIL1 is backfilled and the waste rock emplacements rehabilitated.
Surface Water Management	The following key principles would be applied for the Project to meet the water management objectives: • all temporary flood levees would be designed to provide flood ingress protection to a flood level of a 1:1000 AEP plus suitably designed freeboard; • permanent highwall emplacements would be designed to be self-sustaining and long-term stable; • all water storage dams, structures and facilities would be designed, constructed and managed in accordance with Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (DEHP, 2016); • water storage dams that manage mine affected water would be designed and operated to achieve zero uncontrolled release to the receiving environment; • water for mine operating purposes would be preferentially sourced from dedicated on-site water storage dams; • water collected in water storage dams, sediment dams and/or haul road runoff dams would be captured and retained for reuse on-site and/or controlled release off-site to the receiving environment in accordance with Guideline: Resource Activity - Mining: Model Water Conditions for Coal Mines in the Fitzroy Basin (DEHP, 2013); and • surface runoff from rehabilitated waste rock emplacements would be directed to dedicated sediment dams for settling and release to the receiving environment.
	Updated flood modelling to reflect the final (detailed) design of the temporary levees and waste rock emplacements would be undertaken during the life of the mine and results reported in the Water Management Plan.
	Pembroke will prepare and implement a GDE and Wetland Monitoring Program to detect potential impacts on GDEs and wetlands associated with the Project. This will include monitoring of: • groundwater depth and quality; • health of the terrestrial vegetation; and • surface water quantity and quality.
	In order to confirm that this reduction in catchment does not result in an adverse impact to the ecological values of the wetlands, Pembroke would undertake further investigation and monitoring through the installation of shallow piezometers within these wetlands and the development and implementation of the GDE and Wetland Monitoring Program.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Surface Water Management (Cont.)	Mine affected water would be managed through a mine water management system which is designed to operate in accordance with typical EA conditions and the model water conditions. That is, it would have controlled release conditions and in-stream trigger levels aligned with the WQOs in the EPP (Water).
	A Water Management Plan would be prepared cognisant of the DES guideline for the *Preparation of water management plans for mining activities.* This would include, but not necessarily be limited to: • a description of the process that Pembroke would take should monitoring data indicate that groundwater resources have been affected and the remediation actions that would be implemented; • a description of the protocol for mitigating the effect of hazardous substances on groundwater. Pembroke is currently in the process of preparing this plan; • details of the potential sources of contaminants that could impact on water quality; • a description of the water management system for the Project; • measures to manage and prevent saline drainage and sodicity; • measures to manage and prevent acid rock drainage; • corrective actions and contingency procedures for emergencies; and • a program for monitoring and review of the effectiveness of the Water Management Plan.
	If, during operations, there was a risk that the licence allocation could be exceeded, the site water demands could be adjusted accordingly (e.g. reduce dust suppression demand) or alternative water harvesting measures on site could be implemented, to avoid and/or minimise any impacts on regional water availability.
	To achieve the 'no mine affected water storage uncontrolled release' objective, the mine would be operated such that water could be temporarily stored in the active open pit if required (e.g. as a result of exceedance of the design capacity of the water management system). Alternatively, Pembroke would construct additional pit water dams ahead of mining in the ODS domain to temporarily store any excess mine affected water until there is sufficient out-of-pit storage available.
	Pembroke would prepare a Receiving Environment Monitoring Program for the Project in accordance with the *Receiving Environment Monitoring Program Guideline* (DEHP, 2014b). This would include, but not necessarily be limited to: • the monitoring, identification and description of any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity; • monitoring the effects of the mine on the receiving environment periodically *under natural flow conditions) and while mine affected water is being discharged from the site; and • encompassing any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.
	Controlled releases would not occur within Wetland Protection Areas located adjacent the Project area.
	Surface runoff and seepage from ROM and product coal stockpiles would be monitored for 'standard' water quality parameters including, but not limited to, pH, Electrical Conductivity, major anions (sulphate, chloride and alkalinity), major cations (sodium, calcium, magnesium and potassium), total dissolved solids, total suspended solids, turbidity and a broad suite of soluble metals/metalloids.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Surface Water Management (Cont.)	Sizing of sediments dams would be designed in accordance with the *Best Practice Erosion and Sediment Control* guideline (IECA, 2008) and *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites* (Institute of Engineers Australia 1996) and an Erosion and Sediment Control Plan would be developed and implemented throughout construction and operations. This would include, but not necessarily be limited to: • providing a detailed description of the management measures to be put in place across the Project area, including in relation to the ILF cells; • minimising the area of disturbance; • applying local temporary erosion control measures; and • intercepting runoff from undisturbed areas and divert around disturbed areas. Where temporary measures are likely to be ineffective, Pembroke would divert runoff from disturbed areas to sedimentation basins prior to release from the site.
	Potable water would be regularly tested to ensure it complies with the *Australian Drinking Water Guidelines* (NHMRC, 2011).
	Initially, sediment dam monitoring would occur on a regular (e.g. monthly) basis to demonstrate the water quality of stored waters is consistent with relevant operating parameters to allow releases from sediment dams to occur when required. Subject to demonstrating the water quality objectives can be met, the frequency of monitoring and suite of parameters for the sediment monitoring would be reviewed and updated accordingly (e.g. to occur only when releases occur).
	Pembroke would implement a number of mitigation and management measures for the mine-affected water dams including: • operational measures that would allow for the practical limitations of being able to redistribute stored volumes across the containment system (including operability of equipment under extreme weather conditions); • annual inspections to assess the condition and adequacy of all components of the regulated structures; and • establishing and maintaining a register of regulated structures.
Watercourse Diversion	The Ripstone Creek Diversion has been designed in consideration of the *Water Act 2000* and the *Environmental Protection Act 1994*, and to, as far as possible, replicate the natural hydraulic behaviour of the Ripstone Creek waterway.
	Ripstone Creek Diversion would be constructed in accordance with DNRM's *Guideline: Works that interfere with water in a watercourse—watercourse diversions*.
	Pembroke would submit a certified "Design Plan" for the Ripstone Creek Diversion to DES prior to construction of the diversion (consistent with EA Conditions I1, I3 and I4). The Design Plan will include (but not be limited to): • engineering drawings depicting the physical attributes and dimensions of the watercourse diversion; • the location, function and description of geomorphic and riparian vegetation features within the proposed watercourse diversion; • a revegetation and vegetation management plan (a revegetation plan); and • plans and specifications sufficient to complete construction and revegetation in accordance with the design.
	A monitoring strategy for the Ripstone Creek Diversion has also been developed and includes monitoring prior to construction, during operation and for relinquishment.
	The Ripstone Creek Diversion would closely replicate the natural waterway in profile, flow speeds and where possible shade and instream structure.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Groundwater Management	Pembroke would prepare an Underground Water Impact Report (UWIR) prior to the commencement of mining in accordance with Chapter 3 of the Water Act.
	Pembroke would enter into a make-good agreement through consultation with the owner of 'Bore 8' (e.g. resetting the pump set at an appropriate depth for water supply, accounting for the predicted groundwater drawdown), which would be detailed in the Water Management Plan being prepared for the Project.
	Pembroke would establish an appropriate monitoring network to assess the potential impacts from Moorvale South and the Project.
	Recording of groundwater levels from existing monitoring bores and VWPs would continue and would enable natural groundwater level fluctuations (such as responses to rainfall) to be distinguished from potential groundwater level impacts due to depressurisation resulting from proposed mining activities.
	Groundwater quality monitoring would continue to be undertaken on a quarterly basis.
	Subject to accessibility, quarterly groundwater quality monitoring would also be conducted on privately-owned landholder bores predicted to be impacted by drawdown associated with the mining operation.
	Groundwater quality triggers would be established for each groundwater unit potentially impacted by the Project, including alluvium, regolith and the Permian coal measures.
	Groundwater quality triggers would be established to monitor predicted impacts on both environmental values and predicted changes in groundwater quality, and would be developed in line with the DSITI guideline on *Using monitoring data to assess groundwater quality and potential environmental impacts* (DSITI, 2017). Impact assessment criteria for the site would be documented within a Water Management Plan.
	Each year, an annual review of groundwater quality trends would be conducted by a suitably qualified person. The review would assess the change in groundwater quality over the year, compared to historical trends and impact assessment predictions.
	Every five years, the validity of the groundwater model predictions would be assessed and, if the data indicates significant divergence from the model predictions, the groundwater model would be updated for simulation of mining.
	Pembroke would prepare an Underground Water Impact Report prior to the commencement of mining in accordance with Chapter 3 of the *Water Act, 2000*.
	Bores fitted with automatic loggers would record on a daily basis with others manually dipped on a quarterly basis. Subject to accessibility, quarterly groundwater level monitoring would also be conducted on privately-owned landholder bores predicted to be impacted by drawdown associated with the Project.
	Changes in groundwater levels at the site bored would be compared to predicted groundwater trends to evaluate any deviations from the model predictions.
	Groundwater seepage would be collected and contained within mine water dams and utilised for processing and dust suppression on site.
	Installation of sumps and a pump/pipe system on a bench of the open cut would catch direct groundwater inflows from alluvium exposed in the highwall of the open cut for use in the mine water management system.
	The existing groundwater monitoring network would be consolidated to remove bores in close proximity to each other and augmented with additional proposed monitoring locations around the pit footprint and proposed coal reject emplacements/ILF cells.
Flood Management	The construction of permanent highwall emplacements to the east and south-east of the proposed ODS domain open cut pits adjacent to the Isaac River floodplain would provide immunity to flood levels up to a PMF flood event.
	Temporary flood levees would be designed to protect the active open cut mining area from flood events up to a 0.1% AEP flood event.
	The flood management infrastructure would be inspected by a suitably qualified and experienced person once per year between the months of May and October (inclusive) (i.e. in advance of the wet season). In addition, a visual inspection of the flood management infrastructure would be carried out following major flood events (e.g. 10% AEP or greater) to identify any potential issues with erosion, settlement or slumping.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Flood Management (Cont.)	Geomorphic monitoring would include topographic survey of the Isaac River channel and floodplain, repeated every year for 3 years, and then either every five years, or after every flood event exceeding the 5 yr ARI event (e.g. 20% AEP or greater).
	The rating curve would be adjusted regularly in consultation with DNRME or otherwise relocated further upstream (i.e. 5 km upstream) to the next best confined flow path which is relatively free of influence.
	Pembroke has signed a Confidentiality Agreement with Peabody to allow for sharing of information and modelling. Peabody has supplied their levee alignment which Pembroke has used to conduct more detailed flood modelling. The modelling is being conducted by Peabody's flood consultant and using Peabody's flood model. The modelling has identified where adjustments to the design of the Moorvale South levee are required. Pembroke and Peabody have maintained regular communication regarding the modelling and both parties are working towards resolution of the concerns raised in Peabody's submission.
Waste Rock and Rejects	Pembroke would undertake validation testwork of potential waste rock materials from the Willunga domain as the mine develops to enable appropriate waste rock management measures to be planned and implemented.
	Where highly sodic and/or dispersive waste rock is identified, this material would not be placed in areas which report to final landform surfaces and would not be used in construction activities.
	It is expected that highly sodic and dispersive waste rock may not, in some cases, be able to be selectively handled and preferentially disposed of – although Pembroke would take reasonable measures to identify and selectively place highly sodic and dispersive waste rock. In such cases, waste rock landforms would need to be constructed with short and low (shallow) slopes (indicatively slopes less than 15% and less than 200 m long) and progressively rehabilitated to minimise erosion.
	Geotechnical testing of the backfilled parts of Pits ODS 7 and ODS 8 would be conducted to confirm (and validate as required) it is suitable as a foundation for the permanent highwall emplacement.
	Where waste rock is used for construction activities, this would be limited (as much as practical) to unweathered Permian sandstone materials, as these materials have been found to be more suitable for construction and for use as embankment covering on final landform surfaces.
	Regardless of the waste rock type, especially where engineering or geotechnical stability is required, testing would be undertaken during construction to determine the propensity of such materials to erode.
	A Mineral Waste Management Plan would be developed prior to the commencement of mining for the handling and disposal of fine reject and coarse reject material for the Project.
	Pembroke would undertake validation testwork of actual coal reject materials from the CHPP during development of the mine – particularly during the first two years of CHPP operation following commissioning and following commencement of mining and coal processing at the Willunga domain.
	Validation testwork of actual coal reject materials from the CHPP as the Project develops would be undertaken, particularly during the first year of CHPP operation following commissioning, and following commencement of mining at the Willunga domain.
Biodiversity Offsets	As described in the Biodiversity Offset Strategy, Pembroke would provide a biodiversity offset for the impacts associated with the Project in accordance with the *Queensland Environmental Offsets Policy (Version 1.6)* (DEHP, 2017) and *EPBC Act Environmental Offsets Policy* (SEWPaC, 2012a) (and supporting *EPBC Act Offsets Assessment Guide* [SEWPaC, 2012b]).
	Pembroke proposes a staged environmental offset in consideration of the staged land clearing. The Stage 1 Offset Area is comprised of three distinct areas located on the eastern side of the Isaac River owned by Pembroke (there are no other relevant parties with registered interests under the Qld *Land Act 1994* or the Qld *Land Title Act 1994*).

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Biodiversity Offsets (Cont.)	Pembroke would seek to secure the Stage 1 Offset Area as a Nature Refuge, as requested by DNRME and DES during consultation regarding the Project, within two years of Project commencement.
	Pembroke would provide an offset for each stage of the Project prior to works commencing for that stage.
Flora and Fauna	Riparian vegetation along the Isaac River has been avoided (as much as reasonably practical) in the mine design and a minimum buffer zone of 200 m between the mine pits and Isaac River has been implemented.
	The conveyor would be restricted to a construction corridor of 180 m however this would be reduced when crossing the Isaac River; where, within 200 m of the defining bank, the construction corridor width would be limited to 45 m to reduce impact on the riparian habitat.
	The final location of the rail spur would maintain a buffer zone of approximately 85 m to the bank of the Isaac River at its closest point (affecting 1.5 km of the rail alignment).
	The proposed access road will be co-located with existing public and private roads as far as possible to reduce impacts to native vegetation and will be restricted to 40 m at the crossing point
	The ETL alignment has been designed to avoid construction within riparian areas and watercourses by restricting it to a construction corridor of 10
	The haul road crossing will provide access to the eastern waste emplacement from the Olive Downs South Domain and the haul road will be restricted to a construction corridor of 60 m
	Vegetation clearance procedures would be developed as part of the Project and would include: • boundaries of areas to be cleared, and those not to be cleared, would be defined during construction and operation; • an internal Ground Disturbance Permit would be required prior to any clearing so that clearing activities are authorised prior to disturbance; • clearing of native vegetation would be undertaken progressively over the life of the mine and only in areas required for mining activities within the following year; • pre-clearance flora and fauna surveys would be undertaken by suitably experienced and qualified persons; • collection of native seed from the Project area for use in rehabilitation program; • management of fauna identified during clearing would include relocating individuals to adjacent habitat or treating injuries in accordance with the Fauna Species Management Plan; • in consultation with DES, limit time of construction to avoid breeding seasons for threatened species; • salvage and reuse of selected trees (e.g. tree hollows) for use as fauna habitat in rehabilitation areas (e.g. habitat logs); • demarcate exclusion ones prior to clearing to protect areas of vegetation to be retained; • salvage hollow logs, rocks and large debris removed by construction for habitat enhancement in areas for rehabilitation; and • vegetation clearing/excavation to be subject to internal permitting system.
	Pembroke would implement and enforce an appropriate speed limit in the Project area and vehicular traffic would generally to be restricted to access tracks to minimise potential vehicle strikes on native fauna.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Flora and Fauna (Cont.)	To mitigate the reduction of threatened flora populations, including the Near Threatened (NC Act) *Bertya pedicellata*, Pembroke will adopt the following measures: • pre-clearance surveys for *Bertya pedicellata* within habitat proposed to be cleared along the ETL alignment; • the placement of poles and towers to avoid the *B. pedicellata* populations; • the placement of a maintenance track to avoid the *B. pedicellata* populations; • demarcate exclusion ones prior to clearing to protect areas of vegetation to be retained; and • a Protected Plant Clearing Permit would be required if impacts to this species are required as part of the ETL construction. If required, (to be determined following detailed design of the ETL), Yurika (a company associated with Energy Queensland) would apply for this permit.
	The Ripstone Creek Diversion would closely replicate the natural waterway in profile, flow speeds and where possible shade and instream structure.
	All waterway crossings proposed as part of the Project would be constructed with consideration to the *Accepted Development Requirement for Operational Works that is Constructing or Raising Waterway Barrier Works* (DAF, 2017) so as not to create a barrier to fish movement and minimise impacts on aquatic ecology.
	Pembroke will consult with DAF regarding the final design of the Isaac River Crossing.
	Temporarily clearing native vegetation, excavating, or placing fill in a watercourse necessary for and associated with mining operations would be undertaken in accordance with DNRM's (2012) *Guideline – Activities in a Watercourse, Lake or Spring Associated with Mining Activities.*
	Pembroke would identify and treat aquatic weed infestations within the Project area.
	Pembroke would comply with the NC Act requirements by preparing a Species Management Program (under section 332 of the *Nature Conservation [Wildlife Management] Regulation, 2006*).
	To mitigate increased numbers of feral animals, Pembroke would ensure site waste management measures reduce the potential to attract vermin and other fauna, and undertake management of feral animals, particularly dogs, cats and pigs.
	Pembroke would design bridge structures to maximise vegetation retention and, where applicable, maintain fencing and fauna crossings to ensure safe fauna movement.
	Appropriately qualified persons would be engaged to undertake bi-annual pest animal monitoring in the Project area. Feral animal control strategies (e.g. baiting and trapping) would be implemented in the Project area in accordance with relevant standards, to maintain low abundance of feral animals.
	Pembroke would restrict the presence of domestic pets in the Project area
	Pembroke would implement a Fauna Species Management Plan for the Project which will include the following management measures (once developed): • the open pipe being capped when work is not being undertaken and overnight; • surveys by suitably qualified experts of the entire open trench prior to work activities to identify and remove (if necessary) individuals trapped in the trench; and • install appropriately designed fauna ramps, at appropriate intervals, to assist individuals to escape the open trench.
	Pembroke would implement a Weed and Pest Management Plan for the Project, which would detail the weed prevention techniques proposed to be implemented in the Project area.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Social Impacts	The Project's recruitment strategy would provide equitable access to employment opportunities and prioritise recruitment of people from the Isaac Regional Council LGA in the first instance, before seeking candidates from other areas.
	The construction and use of additional accommodation facilities for the Project's construction and operational workforce is not proposed as part of the Project, given the numerous hotels for temporary accommodation and a number of accommodation villages in Moranbah and Coppabella.
	Pembroke does not propose a 100% fly-in fly-out workforce for the Project.
	Pembroke would implement and regularly update, the Social Impact Management Plan (SIMP) for the Project.
	The Project's Internal Coordination Committee would track implementation of the SIMP and review key performance measures quarterly, to facilitate continual improvement of strategies and practices. Data on social indicators would be tracked and reported to the Community Reference Group (CRG) as available, including quarterly tracking of housing indicators.
	Monitoring data on delivery of the SIMP would be reported at each CRG meeting, and a report against performance measures and social indicators would be presented to the Isaac Regional Council and the CRGs annually.
	Pembroke would make continued contributions to the Isaac Regional Council and the local community through rates and infrastructure contributions and ongoing support for community initiatives.
	Pembroke will consider other opportunities to employ Aboriginal and Torres Strait Islander people during future revisions of the Health and Community Wellbeing Plan.
	Pembroke will provide access and evacuation maps to the QAS for the accommodation camps and villages to be used be the Project workforce, if not already provided.
	Once the workforce has established and more experienced employees are working on the site, Pembroke will consider offering more apprenticeships/traineeships under the more experience operational workforce.
	Pembroke will consider the option of a local training bond and opportunities for recruitment of partners of mine workers as part of the ongoing implementation of the Training and Workforce Development Strategy.
	Pembroke will consult with the Moranbah Traders Association, Clermont Business Group and Nebo Community Development Group during development of the local business engagement strategy.
	Pembroke will continue to consult with health service providers, including general practitioners, as well as the IAHT during development of the Health and Community Wellbeing Plan.
	Pembroke will investigate and implement best industry practices with respect to DIDO personnel, including safe post-roster driving times and the potential for shared driving arrangements, to support employment of Isaac and Mackay LGA residents who live outside a safe daily driving distance.
	Pembroke will consider candidates who reside within the Central Highlands LGA.
	Pembroke will prepare its Workforce Housing and Accommodation Plan to reflect the anticipated local/non-local workforce scenario. The Workforce Housing and Accommodation Plan will be updated regularly to reflect changes to the workforce scenario over the life of the Project.
	Pembroke will consider appropriate measures to manage impacts to the local rental market associated with the Project workforce as part of the Project Workforce Housing and Accommodation Plan, to be prepared in consultation with the IRC.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Social Impacts (Cont.)	Pembroke will require its contractors to comply with the Code of Practice, and compliance with the Code of Practice will be monitored. Monitoring data will be reported to the Community Reference Groups on a regular basis. Where considered necessary, the Code of Practice would be revised in response to feedback from the Community Reference Groups.
	Pembroke will comply with all required reporting requirements under the SSRC Act and any stated or imposed conditions from the Coordinator-General.
	Pembroke will incorporate updated data on the Isaac LGA housing market in the development of the Workforce Housing and Accommodation Plan, and will consider land development options available in the Isaac LGA.
	Pembroke will update Table 6-5 of the SIA provided in the draft EIS during the preparation of the Workforce Housing and Accommodation Plan to include consideration of affordable housing availability.
	Pembroke will commit to reviewing the Emergency Response Procedure annual during construction and annual during the first three years of operation.
	Pembroke will consider the IRC's recommendations for funding arrangements in discussions with the Community Reference Groups, during preparation of the Community Development and Investment Strategy, to be prepared prior to construction.
	Pembroke will collaborate with IRC, other mining companies and DCCSDS to identify and support possible partnership solutions. These may include registered and supported 'shared care' options involving employee families, or overnight family or centre-based care options.
	If monitoring data indicates the Project is impacting on affordable housing, Pembroke will provide financial support to the Isaac Affordable Housing Trust and/or Emergency and Long Term Accommodation Moranbah Inc.
	Pembroke will consult with the Moranbah Traders Association, Clermont Business Group and Nebo Community Development Group during development of the local business engagement strategy.
	Pembroke will consider the potential to use C-Res services to target SMEs.
	Pembroke will consider providing the Local Content Report to IRC when it is developed.
	Pembroke will continue negotiations with the IRC regarding water allocations.
	To reduce demands on local services during construction, Pembroke will: • employ or require its construction contractor to employ an on-site paramedic from the commencement of construction, to manage minor health issues on site, and develop health and wellbeing programs focused on physical and mental health; • develop a contract with a medical service provider to provide workplace health services including health promotion programs and access to a GP for employees living in the Civeo Coppabella Village; and • ensure personnel are made aware of the need to attend to routine health issues whilst they are off roster; and • ensure Project personnel have access to an Employee Assistance Program for support with mental health issues.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Social Impacts (Cont.)	During the first three years of operations, Pembroke will: • liaise with Mackay Hospital and Health Services, and Moranbah and Dysart Hospitals to provide advice on workforce numbers, project timeframes, and on-site/ WAV-based service provision; • make arrangements with GP clinics to ensure that all operational personnel have health assessments in compliance with Coal Mine Workers' Health Scheme, which requires health assessments when personnel enter the industry and then at least every 5 years while employed in the industry; and • seek participation from Moranbah and Dysart Hospital on the Project's Community Reference Groups to collectively monitor Project impacts on local health services, and identify any additional mitigations required to mitigate impediments to local service access.
	Pembroke will work with local health services to identify opportunities to provide health services and programs which both staff and other community members can benefit. This will include partnerships to increase the availability of e.g. men's health checks, skin cancer checks, breast screening or mental health promotion, and will be identified in liaison with local stakeholders during the first year of operation.
Stakeholder Engagement	In addition to the designated public consultation periods, consultation and input from the public will continue to be encouraged by Pembroke throughout the environmental impact assessment process. This will continue to be achieved though websites, community newsletters and bulletins, community information sessions and a Community Advisory Group.
	Implementation of the stakeholder engagement strategy would include engagement and opportunity for consultation with all affected and interested persons, and other relevant stakeholders identified during its implementation.
Noise	Mining operations in Pits ODS7 and ODS8 would be conducted during the daytime hours only, to minimise air quality and noise impacts at nearby privately-owned dwellings.
	Pembroke would maintain machinery to ensure optimal operation and minimal unnecessary noise.
	To reduce noise emissions at the nearest sensitive receptors throughout the life of the Project, Pembroke would enclose a portion of the overland conveyor and utilise low noise idlers.
	Pembroke would implement a Noise Management Plan for the Project.
	Pembroke would implement proactive and reactive noise control measures. These measures would include the use of weather forecasting and real-time measurement of meteorological conditions and noise levels to modify mining operations as required in order to achieve compliance with applicable noise limits at the nearest sensitive receptors.
Air Quality	A number of management measures to minimise the generation of coal dust from rail loading and transport would be implemented, consistent with the dust mitigation activities presented in the *Coal Dust Management Plan* (QR Network, 2010), including: • limiting vehicle speeds on unsealed roads to reduce dust generation; • automated loading of train wagons to prevent overloading; • sill beam brushes to remove coal on the outside faces of the train wagons; • veneering system to prevent coal dust generation during transit to port; and • use of spill pit to recover spilt coal under the train load out.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Air Quality (Cont.)	Pembroke would implement an Air Quality Management Plan for the Project.
	Pembroke would implement proactive and reactive dust control measures. These measures would include the use of weather forecasting and real-time measurement of dust levels and meteorological conditions to modify mining operations as required in order to achieve compliance with applicable air quality objectives at the nearest privately-owned receivers.
	Meteorological data and TSP, PM_{10} and $PM_{2.5}$ levels would continue to be monitored on an ongoing basis at the existing monitoring site at the Project for the implementation of operational dust controls. A network of dust deposition gauges would also be installed.
	If monitoring indicates any unexpected exceedances of air quality objectives, an investigation would be conducted by Pembroke, including additional dust monitoring if required.
Blast Management	Blast management measures to minimise the off-site generation of dust and fumes would be detailed in a Blast Management Plan to be prepared for the Project. Blast management measures may include product selection, review of prevailing meteorology and review of ground conditions.
	Pembroke will prioritise use of non HFC products (utilising available information such as SDS information) when selecting blasting materials.
Project Rail Spur	The Project rail spur would be designed and constructed in consultation with Aurizon to minimise potential impacts on the existing environment in accordance with relevant guidelines, including the *Guide for Development in a Railway Environment* (Department of Infrastructure and Planning, 2010).
	The rail spur and pipeline have been designed to incorporate cattle underpasses and level crossings at various locations to enable cattle and vehicles to move below/across the infrastructure corridor and access the Isaac River. These underpass points would also accommodate water distribution infrastructure to allow the landholder to move water from pumping locations on the Isaac River to other parts of the Wynette property.
	A 4-strand stock fence would be installed along the rail spur to control cattle access. Cattle grids and stock gates would be constructed at all existing access tracks to allow for continued access.
	As part of the detailed design of the Project rail spur, a detailed flood study along the rail corridor has been commissioned by Pembroke. In particular, the detailed design and flood study were prepared to integrate the Project rail spur with Aurizon's flood design criteria, and to confirm the sizing for culverts and bridge structures along the length of the rail spur.
Transport	Parts of Annandale Road, from Daunia Road to the Olive Downs South domain mine access road, would be upgraded for the Project. Pembroke is currently in the process of negotiating an Infrastructure Agreement with the IRC which would define the extent of the staged external road infrastructure upgrades, timing and the associated costs. The upgrade works will include construction of an intersection with the yet to be constructed Moorvale South Mine haul road. The intersection will be designed in consultation with the IRC and Peabody to accommodate the Project and Moorvale South Mine vehicle movements.
	The intersection with the Fitzroy Developmental Road would be constructed in accordance with DTMR (2014) *'Road Planning and Design Manual (Edition 2) – Volume 3: Supplement to Austroads Guide to Road Design Part 4A'*. Furthermore, the lighting at the Willunga Domain Access Road and Fitzroy Development Road intersection would be designed and constructed in accordance with the relevant Australian Standards in consultation with the DTMR.
	Pembroke would install permanent flood lighting at the new intersection, and street lighting along the extent of Annandale Road that is subject to the proposed upgrade. The lighting requirements at these locations would be identified during detailed design of the road upgrades and intersection design, in consultation with the Isaac Regional Council and DTMR.
	Pembroke would upgrade the left turn from the Peak Downs Highway to Daunia Road intersection to a full auxiliary lane in 2027 to cater for project generated traffic.
	Existing local and regional infrastructure would be used to transport product coal to the port for export, including the Norwich Park Branch Railway and the DBCT.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Transport (Cont.)	Pembroke will conduct ongoing monitoring of the usage of the southern portion of Annandale Road and, if monitoring indicates that additional traffic is utilising this road and impacts are being generated, Pembroke will determine whether upgrades are required in consultation with the IRC. Pembroke would contribute to the upgrade costs in accordance with the Infrastructure Agreement with the IRC. Pembroke will instruct all employees and contractors to not access the Olive Downs South domain via the southern portion of Annandale Road.
	Pembroke will arrange for a Pavement Design specialist to determine the existing capacity of the pavement on Moranbah Access Road, in consultation with IRC.
	Pembroke and TTPP will continue to consult with DTMR as well as emergency service providers during preparation of the Road Use Management Plan (RUMP) during March and April 2019 and will provide the RUMP to DTMR once it is complete.
	Management strategies (which would be further detailed in the RUMP) that Pembroke would consider implementing to minimise potential road safety impacts on all public roads carrying Project traffic (including heavy vehicles) include: • operation of lighting on-site would be in accordance with the relevant Australian Standards; • discourage staff from using roads that do not form part of the preferred access routes to the sites; • sponsorship of driver reviver rest areas to deal with driver fatigue; • developing policy on how long drivers can operate a vehicle and how many breaks they require; and • limiting overtime and developing safe driving plans.
	The Project workforce will utilise the existing regional air infrastructure.
Land	The area of agricultural land disturbed by the Project at any one time would be minimised so that beneficial agricultural uses (i.e. cattle grazing) could continue to be undertaken on available grazing land within the Project footprint.
	Soil stripping and handling measures would be undertaken in accordance with a Topsoil Management Plan to be developed for the Project. This would include, but not necessarily be limited to, a description of the site selection for the soil stockpiles and the soil handling and storage measures.
	A topsoil inventory would be maintained during the life of the Project and detailed in the Topsoil Management Plan. The topsoil inventory would account for the volumes and locations of topsoil to be progressively stripped, stockpiled and reapplied.
	Pembroke would implement appropriate mitigation measures and management to prevent or reduce the potential for contamination as a result of the Project. If evidence of unexpected contamination is identified, work would cease in that area and action taken to appropriately delineate the contaminated soil or fill material. In accordance with the EP Act, this material would be managed or remediated and validated under supervision of a suitably qualified person. DES would be notified by telephone, as well as by written notification within 24 hours of detection and advised of appropriate remedial action.
	Pembroke will engage with DNRME and the IRC regarding the potential impacts to the stock route network and any mitigation measures considered necessary. The rail spur would be fenced to prevent access by stock.
	Prior to the commencement of any occupation, activity or construction upon any lands, all appropriate land tenure would be secured and all necessary approvals and/or consents from all parties holding a lawful interest in the lands within the Project disturbance footprint would be obtained. Pembroke will engage with DNRME regarding obtaining relevant tenure for these parcels of land.
	Any future land contamination assessments will be conducted by a suitably qualified person.
Visual	Whilst ensuring that operational safety is not compromised, Pembroke would seek to minimise light emissions from the Project by select placement, configuration and direction of lighting to reduce potential impacts to the surrounding environment where practicable in accordance with the relevant Australian Standard.
	Visual screening to mitigate visual impacts during operations (e.g. through tree planting) would be considered by Pembroke, if requested by a nearby landholder.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Waste	Pembroke would manage the waste produced at the Project in accordance with the waste and resource management hierarchy as stipulated in the WRR Act. If waste must be disposed of, Pembroke would do so in a way that prevents or minimises adverse effects on environmental values.
	Pembroke would continue to engage with the IRC regarding waste disposal options. It is anticipated that waste generated at the Project that requires off-site disposal will either be transferred to the Dysart, Moranbah or Clermont resource recovery centres. If capacity at these facilities is unavailable or an agreement with IRC for waste disposal cannot be reached, waste from the Project could be disposed within landfill sites in the Mackay Regional Council (e.g. disposal within the Hogan's Pocket Landfill, via the Paget Waste Management Centre).
	An appropriately qualified person would be engaged to operate the sewage treatment plant.
	Pembroke would develop a Waste Management Plan which would be implemented at the Project.
Safety	All equipment and vehicle operators would be trained in the safe operation of the equipment (including operating procedures for the refilling and maintenance of fuel storage tanks and mine vehicles) and the relevant emergency response procedures in the event of an incident.
	Regular inspection programs would be undertaken to monitor the structural integrity of fuel tanks and bunds.
	The explosive magazine would be fenced, signed and maintained in accordance with AS 2187.1:1998 *Explosives – Storage, Transport and Use.*
	The following processes and measures would be implemented at the Project to reduce the risk of impacts on health, safety and the environment associated with the Project: • Development and implementation of a Risk Management System. • Hazardous substances (including, hydrocarbons, chemicals and explosives) would be transported, stored and handled in accordance with relevant legislation, standards and guidelines. • The management of all chemicals would be conducted in accordance with the relevant safety data sheet. • Training of vehicle and equipment operators would be undertaken to allow for safe and stable operation of the equipment and emergency response procedures would be implemented in the event of an incident. • Pembroke will require contractors to dispose of waste on-site per their existing agreements, or waste will be trucked out of the IRC area to waste facilities with the capacity to take the waste generated by the Project. • Regular inspections would be conducted to maintain the structural integrity of hazardous substance storage tanks and bunds. • Spill control kits would be located at all chemical storage areas and within storage vehicles. • Pembroke would liaise with relevant community emergency services and implement community engagement processes. • The explosives magazines would be fenced, signed and maintained in accordance with AS 2187.1:1998.
	Pembroke would prepare an Emergency Response Procedure in consultation with emergency services (e.g. Queensland Police Service, Queensland Fire and Emergency Service). The Emergency Response Procedure will be provided to the QAS prior to commencement of the Project.
	Pembroke would perform a risk study specific to hazardous chemicals stored on-site during the detailed design phase of the Project, in accordance with relevant standards and codes.

Table 22-1 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS

Project Matter	Commitment
Biosecurity	Pembroke would prepare and implement a Weed and Pest Management Plan for the Project.
	Pembroke would manage the Project so that it does not result in the spread of pests, diseases or contaminants.
	Monitoring of feral animals (including pigs, dogs, rabbits and cats) will be undertaken every two years by an appropriately qualified contractor. If the results of these surveys indicate that a control program is necessary, such a control program will be implemented and monitored.
	Weed management (prevention, monitoring and control) would be undertaken to lessen the abundance and species of weeds in the Project area and minimise the potential for weeds to spread into adjacent habitat areas. Weeds that are present on-site would be identified by regular surveys (of tracks, revegetation [rehabilitation] areas and topsoil stockpiles, etc.).
Bushfire Risk	All reasonable and practicable fire prevention measures would be implemented by Pembroke during construction and operation, including: • clearing restrictions; • controlled grazing; • restricted vehicle movements; • construction and maintenance of fire breaks (if required); • use of diesel vehicles; • prohibition of smoking in fire prone areas; • rapid response to any outbreak of fire; • provision of fire-fighting equipment around site; and • training of staff in the use of the fire-fighting equipment.
	Bushfire prevention and management measures would include: • Implementation of a Safety Management System and associated frameworks to record and monitor fire including: - incident management framework; - hazard / near miss reporting process; - incident notification; and - crisis management and evacuation framework. • Allowance for appropriate buffer distances between the Project and surrounding bushland. • Minimise any chemicals used in the Project area and ensure they are handled and disposed of in accordance with the relevant Safety Data Sheet. Ensure access tracks are able to be used for fire-fighting and other emergency purposes by Queensland Fire and Rescue Service.

Table 22-2
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E).	The following key principles would be applied for the Project to meet the water management objectives: • all temporary flood levees would be designed to provide flood ingress protection to a flood level of a 1:1000 AEP plus suitably designed freeboard; • permanent highwall emplacements would be designed to be self-sustaining and long-term stable; • all water storage dams, structures and facilities would be designed, constructed and managed in accordance with Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (DEHP, 2016); • water storage dams that manage mine affected water would be designed and operated to achieve zero uncontrolled release to the receiving environment; • water for mine operating purposes would be preferentially sourced from dedicated on-site water storage dams; • water collected in water storage dams, sediment dams and/or haul road runoff dams would be captured and retained for reuse on-site and/or controlled release off-site to the receiving environment in accordance with Guideline: Resource Activity - Mining: Model Water Conditions for Coal Mines in the Fitzroy Basin (DEHP, 2013); and • surface runoff from rehabilitated waste rock emplacements would be directed to dedicated sediment dams for settling and release to the receiving environment.
	Updated flood modelling to reflect the final (detailed) design of the temporary levees and waste rock emplacements would be undertaken during the life of the mine and results reported in the Water Management Plan.
	Pembroke will prepare and implement a GDE and Wetland Monitoring Program to detect potential impacts on GDEs and wetlands associated with the Project. This will include monitoring of: • groundwater depth and quality; • health of the terrestrial vegetation; and • surface water quantity and quality.
	In order to confirm that this reduction in catchment does not result in an adverse impact to the ecological values of the wetlands, Pembroke would undertake further investigation and monitoring through the installation of shallow piezometers within these wetlands and the development and implementation of the GDE and Wetland Monitoring Program.
	Mine affected water would be managed through a mine water management system which is designed to operate in accordance with typical EA conditions and the model water conditions. That is, it would have controlled release conditions and in-stream trigger levels aligned with the WQOs in the EPP (Water).

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) (Cont.)	A Water Management Plan would be prepared cognisant of the DES guideline for the *Preparation of water management plans for mining activities.* This would include, but not necessarily be limited to: • a description of the process that Pembroke would take should monitoring data indicate that groundwater resources have been affected and the remediation actions that would be implemented; • a description of the protocol for mitigating the effect of hazardous substances on groundwater. Pembroke is currently in the process of preparing this plan; • details of the potential sources of contaminants that could impact on water quality; • a description of the water management system for the Project; • measures to manage and prevent saline drainage and sodicity; • measures to manage and prevent acid rock drainage; • corrective actions and contingency procedures for emergencies; and • a program for monitoring and review of the effectiveness of the Water Management Plan.
	If, during operations, there was a risk that the licence allocation could be exceeded, the site water demands could be adjusted accordingly (e.g. reduce dust suppression demand) or alternative water harvesting measures on site could be implemented, to avoid and/or minimise any impacts on regional water availability.
	To achieve the 'no mine affected water storage uncontrolled release' objective, the mine would be operated such that water could be temporarily stored in the active open pit if required (e.g. as a result of exceedance of the design capacity of the water management system). Alternatively, Pembroke would construct additional pit water dams ahead of mining in the ODS domain to temporarily store any excess mine affected water until there is sufficient out-of-pit storage available.
	Pembroke would prepare a Receiving Environment Monitoring Program for the Project in accordance with the *Receiving Environment Monitoring Program Guideline* (DEHP, 2014b). This would include, but not necessarily be limited to: • the monitoring, identification and description of any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity; • monitoring the effects of the mine on the receiving environment periodically *under natural flow conditions) and while mine affected water is being discharged from the site; and • encompassing any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.
	Controlled releases would not occur within Wetland Protection Areas located adjacent the Project area.
	Surface runoff and seepage from ROM and product coal stockpiles would be monitored for 'standard' water quality parameters including, but not limited to, pH, Electrical Conductivity, major anions (sulphate, chloride and alkalinity), major cations (sodium, calcium, magnesium and potassium), total dissolved solids, total suspended solids, turbidity and a broad suite of soluble metals/metalloids.

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) (Cont.)	Sizing of sediments dams would be designed in accordance with the *Best Practice Erosion and Sediment Control* guideline (IECA, 2008) and *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites* (Institute of Engineers Australia 1996) and an Erosion and Sediment Control Plan would be developed and implemented throughout construction and operations. This would include, but not necessarily be limited to: • providing a detailed description of the management measures to be put in place across the Project area, including in relation to the ILF cells; • minimising the area of disturbance; • applying local temporary erosion control measures; and • intercepting runoff from undisturbed areas and divert around disturbed areas. Where temporary measures are likely to be ineffective, Pembroke would divert runoff from disturbed areas to sedimentation basins prior to release from the site.
	Potable water would be regularly tested to ensure it complies with the *Australian Drinking Water Guidelines* (NHMRC, 2011).
	Initially, sediment dam monitoring would occur on a regular (e.g. monthly) basis to demonstrate the water quality of stored waters is consistent with relevant operating parameters to allow releases from sediment dams to occur when required. Subject to demonstrating the water quality objectives can be met, the frequency of monitoring and suite of parameters for the sediment monitoring would be reviewed and updated accordingly (e.g. to occur only when releases occur).
	Pembroke would implement a number of mitigation and management measures for the mine-affected water dams including: • operational measures that would allow for the practical limitations of being able to redistribute stored volumes across the containment system (including operability of equipment under extreme weather conditions); • annual inspections to assess the condition and adequacy of all components of the regulated structures; and • establishing and maintaining a register of regulated structures.
	The Ripstone Creek Diversion has been designed in consideration of the *Water Act 2000* and the *Environmental Protection Act 1994*, and to, as far as possible, replicate the natural hydraulic behaviour of the Ripstone Creek waterway.
	Ripstone Creek Diversion would be constructed in accordance with DNRM's *Guideline: Works that interfere with water in a watercourse—watercourse diversions*.
	Pembroke would submit a certified "Design Plan" for the Ripstone Creek Diversion to DES prior to construction of the diversion (consistent with EA Conditions I1, I3 and I4). The Design Plan will include (but not be limited to): • engineering drawings depicting the physical attributes and dimensions of the watercourse diversion; • the location, function and description of geomorphic and riparian vegetation features within the proposed watercourse diversion; • a revegetation and vegetation management plan (a revegetation plan); and • plans and specifications sufficient to complete construction and revegetation in accordance with the design.
	A monitoring strategy for the Ripstone Creek Diversion has also been developed and includes monitoring prior to construction, during operation and for relinquishment.
	The Ripstone Creek Diversion would closely replicate the natural waterway in profile, flow speeds and where possible shade and instream structure.

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) (Cont.)	Pembroke would prepare an Underground Water Impact Report (UWIR) prior to the commencement of mining in accordance with Chapter 3 of the Water Act.
	Pembroke would enter into a make-good agreement through consultation with the owner of 'Bore 8' (e.g. resetting the pump set at an appropriate depth for water supply, accounting for the predicted groundwater drawdown), which would be detailed in the Water Management Plan being prepared for the Project.
	Pembroke would establish an appropriate monitoring network to assess the potential impacts from Moorvale South and the Project.
	Recording of groundwater levels from existing monitoring bores and VWPs would continue and would enable natural groundwater level fluctuations (such as responses to rainfall) to be distinguished from potential groundwater level impacts due to depressurisation resulting from proposed mining activities.
	Groundwater quality monitoring would continue to be undertaken on a quarterly basis.
	Subject to accessibility, quarterly groundwater quality monitoring would also be conducted on privately-owned landholder bores predicted to be impacted by drawdown associated with the mining operation.
	Groundwater quality triggers would be established for each groundwater unit potentially impacted by the Project, including alluvium, regolith and the Permian coal measures.
	Groundwater quality triggers would be established to monitor predicted impacts on both environmental values and predicted changes in groundwater quality, and would be developed in line with the DSITI guideline on *Using monitoring data to assess groundwater quality and potential environmental impacts* (DSITI, 2017). Impact assessment criteria for the site would be documented within a Water Management Plan.
	Each year, an annual review of groundwater quality trends would be conducted by a suitably qualified person. The review would assess the change in groundwater quality over the year, compared to historical trends and impact assessment predictions.
	Every five years, the validity of the groundwater model predictions would be assessed and, if the data indicates significant divergence from the model predictions, the groundwater model would be updated for simulation of mining.
	Pembroke would prepare an Underground Water Impact Report prior to the commencement of mining in accordance with Chapter 3 of the *Water Act, 2000*.
	Bores fitted with automatic loggers would record on a daily basis with others manually dipped on a quarterly basis. Subject to accessibility, quarterly groundwater level monitoring would also be conducted on privately-owned landholder bores predicted to be impacted by drawdown associated with the Project.
	Changes in groundwater levels at the site bored would be compared to predicted groundwater trends to evaluate any deviations from the model predictions.
	Groundwater seepage would be collected and contained within mine water dams and utilised for processing and dust suppression on site.
	Installation of sumps and a pump/pipe system on a bench of the open cut would catch direct groundwater inflows from alluvium exposed in the highwall of the open cut for use in the mine water management system.
	The existing groundwater monitoring network would be consolidated to remove bores in close proximity to each other and augmented with additional proposed monitoring locations around the pit footprint and proposed coal reject emplacements/ILF cells.

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
Ornamental Snake	The following measures would be undertaken by Pembroke to minimise potential adverse impacts on important habitat for the Ornamental Snake: • Vegetation clearance procedures outlined in Table 7-6. This includes progressive vegetation clearing, demarcation of habitats proposed to be cleared, the implementation of pre-clearance surveys and the use of a qualified fauna spotter catcher. • Implementation of a Weed and Pest Management Plan to monitor and control feral animals (including feral pigs which can degrade important habitat for the Ornamental Snake [DEE, 2019]). • Bushfire prevention would be undertaken, noting that the important habitat for the Ornamental Snake occurs in Brigalow Woodland and this species uses groundcover which is susceptible to fire (DEE, 2019). A National or State recovery plan has not been prepared for this species. The above measures are predicted to be effective in minimising potential adverse impacts from the Project on the important and dispersal habitat for the Ornamental Snake because they are focused on addressing the recognised threats to the species and they are consistent with the relevant threat abatement actions (e.g. avoiding additional habitat loss and minimising the risk of invasive and predatory species) (DEE, 2019). Further to this, the unavoidable loss of habitat for the Ornamental Snake associated with the Project would be offset in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) (Section 10).
Australian Painted Snipe	The following measures would be undertaken by Pembroke to minimise potential adverse impacts on breeding/foraging habitat for the Australian Painted Snipe: • Vegetation clearance procedures outlined in Table 7-6. This includes progressive vegetation clearing, demarcation of habitats proposed to be cleared, the implementation of pre-clearance surveys and the use of a qualified fauna spotter catcher. • Implementation of a Weed and Pest Management Plan to monitor and control feral animals (including foxes and feral cats which are known threats to the Australian Painted Snipe) within the breeding/foraging habitat identified. The above measures are predicted to be effective in minimising potential adverse impacts from the Project on potential foraging habitat for the Australian Painted Snipe because they are focused on addressing the recognised threats to the species identified in the *Approved Conservation Advice for Rostratula australis Australian Painted Snipe* (DSEWPC, 2013) and are consistent with the relevant threat abatement actions (e.g. avoiding additional habitat loss and controlling feral animals) (after DotE, 2014b). Further to this, the unavoidable loss of habitat for the Australian Painted Snipe associated with the Project would be offset in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) (Section 10).
Squatter Pigeon (Southern)	The following measures would be undertaken by Pembroke to minimise potential adverse impacts on the breeding, foraging and dispersal habitat for the Squatter Pigeon (southern): • Vegetation clearance procedures outlined in Table 7-6. This includes progressive vegetation clearing, demarcation of habitats proposed to be cleared, the implementation of pre-clearance surveys and the use of a qualified fauna spotter catcher. • A Weed and Pest Management Plan would be implemented to monitor and control feral animals (such as the European Rabbit, Feral Cat and European Red Fox which are known threats to the Squatter Pigeon [southern]) in the breeding, foraging and dispersal habitat for this species. The above measures are predicted to be effective in minimising potential adverse impacts from the Project on the breeding, foraging and dispersal habitat for the Squatter Pigeon (southern) because they are focused on addressing the recognised threats to the species and are consistent with the relevant threat abatement actions (e.g. avoiding additional habitat loss and controlling predators and herbivores) (DEE, 2019). A National or State recovery plan has not been prepared for this species. Further to this, the unavoidable loss of habitat for the Squatter Pigeon (southern) associated with the Project would be offset in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) (Section 10).

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
Koala	The following measures would be undertaken by Pembroke to minimise potential adverse impacts on critical habitat for the Koala: • Impact avoidance measures outlined in Table 7-6 of the Additional Information to the EIS (including minimising potential impacts to the riparian corridor associated with the Isaac River). • Vegetation clearance procedures outlined in Table 7-6. This includes progressive vegetation clearing, demarcation of habitats proposed to be cleared, the implementation of pre-clearance surveys and the use of a qualified fauna spotter catcher. • Implementation of fauna crossings to ensure safe fauna movement across haul roads (between areas of critical habitat). • A Weed and Pest Management Plan would be implemented to monitor and control feral animals (such as the feral dog which is a known threat to the Koala) in the critical habitat for the Koala. The above measures are predicted to be effective in minimising potential adverse impacts from the Project on critical habitat for the Koala because they are focused on addressing the recognised threats to the species and are consistent with the relevant threat abatement actions (e.g. avoiding additional habitat loss and controlling predators) (DEE, 2019). A National or State recovery plan has not been prepared for this species. Further to this, the unavoidable loss of habitat for the Koala associated with the Project would be offset in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) (Section 10).
Brigalow EEC	The Project would remove approximately 13 ha of Brigalow EEC (represented by RE 11.4.9). These patches are already degraded by edge effects and are highly fragmented. A further two patches of Brigalow EEC would be avoided by the Project and it is unlikely that any potential indirect impacts would result in significant impacts to these patches of Brigalow EEC. The following measures would be undertaken by Pembroke to minimise potential adverse impacts on habitat for the Greater Glider: • Vegetation clearance procedures, including demarcation of clearing zones to protect the areas of Brigalow EEC to be retained. • Bushfire prevention would be undertaken. • A Weed and Pest Management Plan would be implemented to monitor and control weed species in areas of Brigalow EEC to be retained. The above measures are predicted to be effective in minimising potential adverse impacts from the Project on Brigalow EEC because they are focused on addressing the recognised threats to the community and are consistent with the relevant threat abatement actions (e.g. avoiding additional clearance, minimising the risk of fire, weeds and pest animals) (DEE, 2019). A National or State recovery plan has not been prepared for this community. Further to this, the unavoidable loss of Brigalow EEC associated with the Project would be offset in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) (Section 10).
Listed threatened species and communities (sections 18 and 18A) Listed migratory species (sections 20 and 20A)	Riparian vegetation along the Isaac River has been avoided (as much as reasonably practical) in the mine design and a minimum buffer zone of 200 m between the mine pits and Isaac River has been implemented.
	The conveyor would be restricted to a construction corridor of 180 m however this would be reduced when crossing the Isaac River; where, within 200 m of the defining bank, the construction corridor width would be limited to 45 m to reduce impact on the riparian habitat.
	The final location of the rail spur would maintain a buffer zone of approximately 85 m to the bank of the Isaac River at its closest point (affecting 1.5 km of the rail alignment).
	The proposed access road will be co-located with existing public and private roads as far as possible to reduce impacts to native vegetation and will be restricted to 40 m at the crossing point.
	The ETL alignment has been designed to avoid construction within riparian areas and watercourses by restricting it to a construction corridor of 10 m.

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
Listed threatened species and communities (sections 18 and 18A) Listed migratory species (sections 20 and 20A) (Cont.)	The haul road crossing of the Isaac River would provide access to the eastern waste emplacement from the Olive Downs South Domain and the haul road will be restricted to a construction corridor of 60 m where it traverses riparian vegetation.
	Vegetation clearance procedures would be developed as part of the Project and would include: • boundaries of areas to be cleared, and those not to be cleared, would be defined during construction and operation; • an internal Ground Disturbance Permit would be required prior to any clearing so that clearing activities are authorised prior to disturbance; • clearing of native vegetation would be undertaken progressively over the life of the mine and only in areas required for mining activities within the following year; • pre-clearance flora and fauna surveys would be undertaken by suitably experienced and qualified persons; • collection of native seed from the Project area for use in rehabilitation program; • management of fauna identified during clearing would include relocating individuals to adjacent habitat or treating injuries in accordance with the Fauna Species Management Plan; • in consultation with DES, limit time of construction to avoid breeding seasons for threatened species; • salvage and reuse of selected trees (e.g. tree hollows) for use as fauna habitat in rehabilitation areas (e.g. habitat logs); • demarcate exclusion ones prior to clearing to protect areas of vegetation to be retained; • salvage hollow logs, rocks and large debris removed by construction for habitat enhancement in areas for rehabilitation; and • vegetation clearing/excavation to be subject to internal permitting system.
	Pembroke would implement and enforce an appropriate speed limit in the Project area and vehicular traffic would generally to be restricted to access tracks to minimise potential vehicle strikes on native fauna.
	The Ripstone Creek Diversion would closely replicate the natural waterway in profile, flow speeds and where possible shade and instream structure.
	All waterway crossings proposed as part of the Project would be constructed with consideration to the *Accepted Development Requirement for Operational Works that is Constructing or Raising Waterway Barrier Works* (DAF, 2017) so as not to create a barrier to fish movement and minimise impacts on aquatic ecology.
	Temporarily clearing native vegetation, excavating, or placing fill in a watercourse necessary for and associated with mining operations would be undertaken in accordance with DNRM's (2012) *Guideline – Activities in a Watercourse, Lake or Spring Associated with Mining Activities.*
	Pembroke would identify and treat aquatic weed infestations within the Project area.
	To mitigate increased numbers of feral animals, Pembroke would ensure site waste management measures reduce the potential to attract vermin and other fauna, and undertake management of feral animals, particularly dogs, cats and pigs.
	Pembroke would design bridge structures to maximise vegetation retention and, where applicable, maintain fencing and fauna crossings to ensure safe fauna movement.

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
Listed threatened species and communities (sections 18 and 18A) Listed migratory species (sections 20 and 20A) (Cont.)	Appropriately qualified persons would be engaged to undertake bi-annual pest animal monitoring in the Project area. Feral animal control strategies (e.g. baiting and trapping) would be implemented in the Project area in accordance with relevant standards, to maintain low abundance of feral animals.
	Pembroke would implement a Fauna Species Management Plan for the Project.
	Pembroke would implement a Weed and Pest Management Plan for the Project, which would detail the weed prevention techniques proposed to be implemented in the Project area.
	As described in the Biodiversity Offset Strategy, Pembroke would provide a biodiversity offset for the impacts associated with the Project in accordance with the *EPBC Act Environmental Offsets Policy* (SEWPaC, 2012a) (and supporting *EPBC Act Offsets Assessment Guide* [SEWPaC, 2012b]).
	Pembroke proposes a staged environmental offset in consideration of the staged land clearing. The Stage 1 Offset Area is comprised of three distinct areas located on the eastern side of the Isaac River owned by Pembroke (there are no other relevant parties with registered interests under the Qld *Land Act 1994* or the Qld *Land Title Act 1994*).
	Pembroke would seek to secure the Stage 1 Offset Area as a Nature Refuge, as requested by DNRME and DES during consultation regarding the Project, within two years of Project commencement.
	Pembroke would provide an offset for each stage of the Project prior to works commencing for that stage.
	Pembroke would maintain machinery to ensure optimal operation and minimal unnecessary noise.
	Pembroke would implement a Noise Management Plan for the Project.
	A number of management measures to minimise the generation of coal dust from rail loading and transport would be implemented, consistent with the dust mitigation activities presented in the *Coal Dust Management Plan* (QR Network, 2010), including limiting vehicle speeds on unsealed roads to reduce dust generation.
	Pembroke would implement an Air Quality Management Plan for the Project.
	The Project rail spur would be designed and constructed in consultation with Aurizon to minimise potential impacts on the existing environment in accordance with relevant guidelines, including the *Guide for Development in a Railway Environment* (Department of Infrastructure and Planning, 2010).
	Whilst ensuring that operational safety is not compromised, Pembroke would seek to minimise light emissions from the Project by select placement, configuration and direction of lighting to reduce potential impacts to the surrounding environment where practicable in accordance with the relevant Australian Standard.
	Pembroke would prepare and implement a Weed and Pest Management Plan for the Project.
	Pembroke would manage the Project so that it does not result in the spread of pests, diseases or contaminants.
	Monitoring of feral animals (including pigs, dogs, rabbits and cats) will be undertaken every two years by an appropriately qualified contractor. If the results of these surveys indicate that a control program is necessary, such a control program will be implemented and monitored.
	Weed management (prevention, monitoring and control) would be undertaken to lessen the abundance and species of weeds in the Project area and minimise the potential for weeds to spread into adjacent habitat areas. Weeds that are present on-site would be identified by regular surveys (of tracks, revegetation [rehabilitation] areas and topsoil stockpiles, etc.).

Table 22-2 (Continued)
Summary of Project Commitments made by Pembroke Throughout the EIS Relevant to MNES

Matter of National Environmental Significance	Commitment
Listed threatened species and communities (sections 18 and 18A) Listed migratory species (sections 20 and 20A) (Cont.)	All reasonable and practicable fire prevention measures would be implemented by Pembroke during construction and operation, including: • clearing restrictions; • controlled grazing; • restricted vehicle movements; • construction and maintenance of fire breaks (if required); • use of diesel vehicles; • prohibition of smoking in fire prone areas; • rapid response to any outbreak of fire; • provision of fire-fighting equipment around site; and • training of staff in the use of the fire-fighting equipment.
	Bushfire prevention and management measures would include: • Implementation of a Safety Management System and associated frameworks to record and monitor fire including: - incident management framework; - hazard / near miss reporting process; - incident notification; and - crisis management and evacuation framework. • Allowance for appropriate buffer distances between the Project and surrounding bushland. • Minimise any chemicals used in the Project area and ensure they are handled and disposed of in accordance with the relevant Safety Data Sheet. Ensure access tracks are able to be used for fire-fighting and other emergency purposes by Queensland Fire and Rescue Service.