Draft terms of reference for an environmental impact statement under the *Environmental Protection Act 1994*

Isaac Downs Project
proposed by STANMORE IP SOUTH PTY LTD
June 2019

Queensland Government

Prepared by: ***STANMORE IP SOUTH PTY LTD***

Completed in the approved form prepared by the Department of Environment and Science for resource projects undergoing assessment by environmental impact statement under chapter 3, part 1 of the *Environmental Protection Act 1994*.

June 2019

Contents

1. Purpose of this document

1.1 Introduction

This document outlines the draft terms of reference (TOR) for the proposed Isaac Downs Project (herein referred to as 'the proposed project') proposed by STANMORE IP SOUTH PTY LTD being assessed under the environmental impact statement (EIS) process in chapter 3, part 1, of the *Environmental Protection Act 1994* (EP Act). It sets out the scope and required content that the EIS must include to allow the purposes of the EIS under section 40 of the EP Act to be achieved for the proposed project.

The EIS must address key requirements outlined in the EP Act and subordinate legislation, including but not limited to:

- the requirements of section 40 of the EP Act, which specifies the purpose of an EIS and of the EIS process
- the requirements of sections 125, 126 and 126A which set out the general information requirements for applications for an environmental authority (EA)
- the requirements of chapter 2 and schedule 1 of the Environmental Protection Regulation 2008 (EP Regulation), including matters to be addressed by assessment under the bilateral agreement between the Australian Government and the State of Queensland
- the environmental objectives and performance outcomes specified in schedule 5, part 3, tables 1 and 2 of the EP Regulation.

Section 139 of the EP Act states that the information stage of the EA application process does not apply if the EIS process is complete, unless there has been a subsequent change to the proposed project. It is therefore important that the EIS provides all the information needed to enable the issuing of an EA for the proposed project as set out in these TOR in conjunction with latest version of guidance material published on the department's website[1].

While every attempt is made by the Department of Environment and Science (herein referred to as 'the department') to ensure the final TOR requires an assessment of all relevant matters, the final TOR may not be exhaustive. Therefore the EIS for the Isaac Downs Project must address other matters not covered in the final TOR in the following circumstances:

- Studies reveal a matter that had not been foreseen when the TOR was finalised.
- An issue not identified previously is considered contentious by the public, such as a public perception of potential environmental harm or nuisance even though the perception might be mistaken.
- The department directs the proponent in writing to address a matter as an information request under section 62 of the EP Act.
- New or amended legislation or policies come into effect after the TOR has been finalised, regardless of whether or not the legislation or policies have been listed in the TOR. Transitional arrangements or exemptions may apply for individual projects.
- The proponent makes amendments to the proposed project that would result in a change in the nature, timing or location of any impacts.

The department must consider if an EIS addresses the final TOR reference in an acceptable form and may refuse the EIS under section 49(3) of the EP Act if it believes the information provided in the EIS is not adequate.

[1] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html.

1.2 Information about the proposed project and assessment

1.2.1 Project proponent

STANMORE IP SOUTH PTY LTD (IP South), a wholly owned subsidiary of STANMORE COAL LTD (Stanmore), is the proponent for the Isaac Downs Project (the Project). Stanmore is a publicly listed company, with interests in operational and prospective coal projects and mining assets within Queensland's Bowen and Surat Basins.

Proposed project description

The Project is an open cut metallurgical (steel making) coal project mining a total of approximately 35 million tonnes over 16 years, with a variable annual profile. The Project is located in the Bowen Basin coal field, Central Queensland, approximately 145 km south west of Mackay and 10 km south east of Moranbah (Figure 1). The Project comprises a single open cut mining pit, run of mine (ROM) coal haul road, linear infrastructure, access road, ROM coal pad, levee and mine infrastructure area (MIA). The proposed Project layout is shown in Figure 2.

The proponent has applied for mining leases (MLs) and intends to apply for an environmental authority (EA) to enable the development of the Project.

STANMORE IP COAL PTY LTD (IP Coal), a separate subsidiary of Stanmore, operates the Isaac Plains Mine (IPM) on granted mining leases which will adjoin the Project mining leases. IP South will, subject to agreement with IP Coal, utilise existing approved infrastructure at IPM for coal processing, rejects management, coal railing, power supply and water management.

The Project will utilise approved capacity at the IPM coal handling and preparation plant (CHPP). There is an existing rail loop at IPM which is connected by the Goonyella rail line to Dalrymple Bay Coal Terminal (DBCT). Coal from Isaac Downs will use this rail loop at IPM.

All rejects from the CHPP will be managed under the existing approved rejects management plan for IPM. This will minimise the infrastructure required for the Isaac Downs Project and hence reduce Project impacts. As IPM coal production declines, mining will transition to Isaac Downs.

Progressive clearing of non-remnant and remnant vegetation will be required ahead of topsoil stripping. Stripped topsoil will be either used directly on progressive rehabilitation or stockpiled for later use. The mine will utilise an open cut mining technique where strips and blocks will be mined in succession, thus allowing waste from one strip or block to be dumped into a previously mined out area. Overburden material will be drilled and blasted and subsequently removed by a combination of dragline, truck/shovel, truck/excavator or dozer push methods to expose the top coal seam.

The coal will be mined using front end loaders and excavators and placed into rear dump trucks for haulage. The haul trucks will transport the coal to a ROM coal stockpile area located near the pit. The coal will then be loaded onto road trains (or similar) for transport to the IPM CHPP along a dedicated haul road, with an underpass beneath the Peak Downs Highway. The Project will utilise approved capacity at the CHPP.

A levee will be progressively constructed along the Isaac River to protect mining activities from flood events. The levee will be designed with a flood immunity level for the 1:1000 annual exceedance probability (AEP) flood event. The levee will be located outside the high bank of the Isaac River and to minimise impacts on the zone of riparian vegetation identified through field ecology studies.

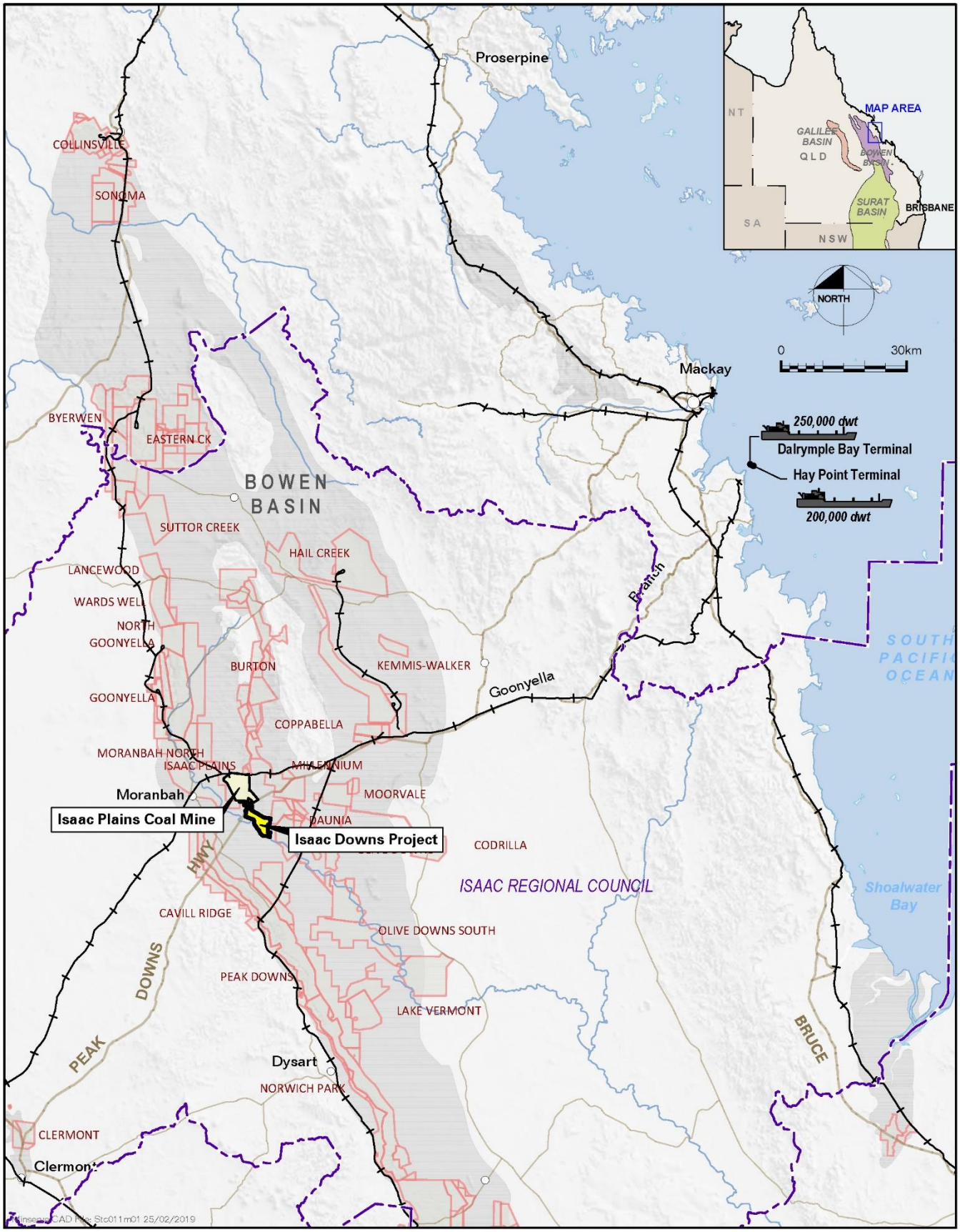
Landform reshaping will involve grading to achieve the final landform and proposed post-mining land use design criteria. Areas will be reshaped as they become available following which the balance of the rehabilitation process will be undertaken. Following reshaping and the construction of drainage, progressive rehabilitation will be undertaken with topsoil spread over the surface of the final landform, and then seeded. Rehabilitation maintenance and monitoring activities will be undertaken.

A void will remain at mine closure and will not be located in a floodplain. IP South will investigate options for a post mining land use of the void area. The reshaped final landform will not require a levee to protect the void from flooding and the levee will be incorporated into the final landform.

An access road will be constructed from the Peak Downs Highway to the site offices and MIA. The MIA will include a workshop and administration offices.

The dragline currently operating at IPM will be walked, over a few days, to Isaac Downs for commencement of mining and return to IPM once mining at Isaac Downs is completed.

A State owned Quarry Reserve is located adjacent the proposed haul road. The proponent proposes to investigate the suitability of the quarry material, primarily for haul road and access road construction.



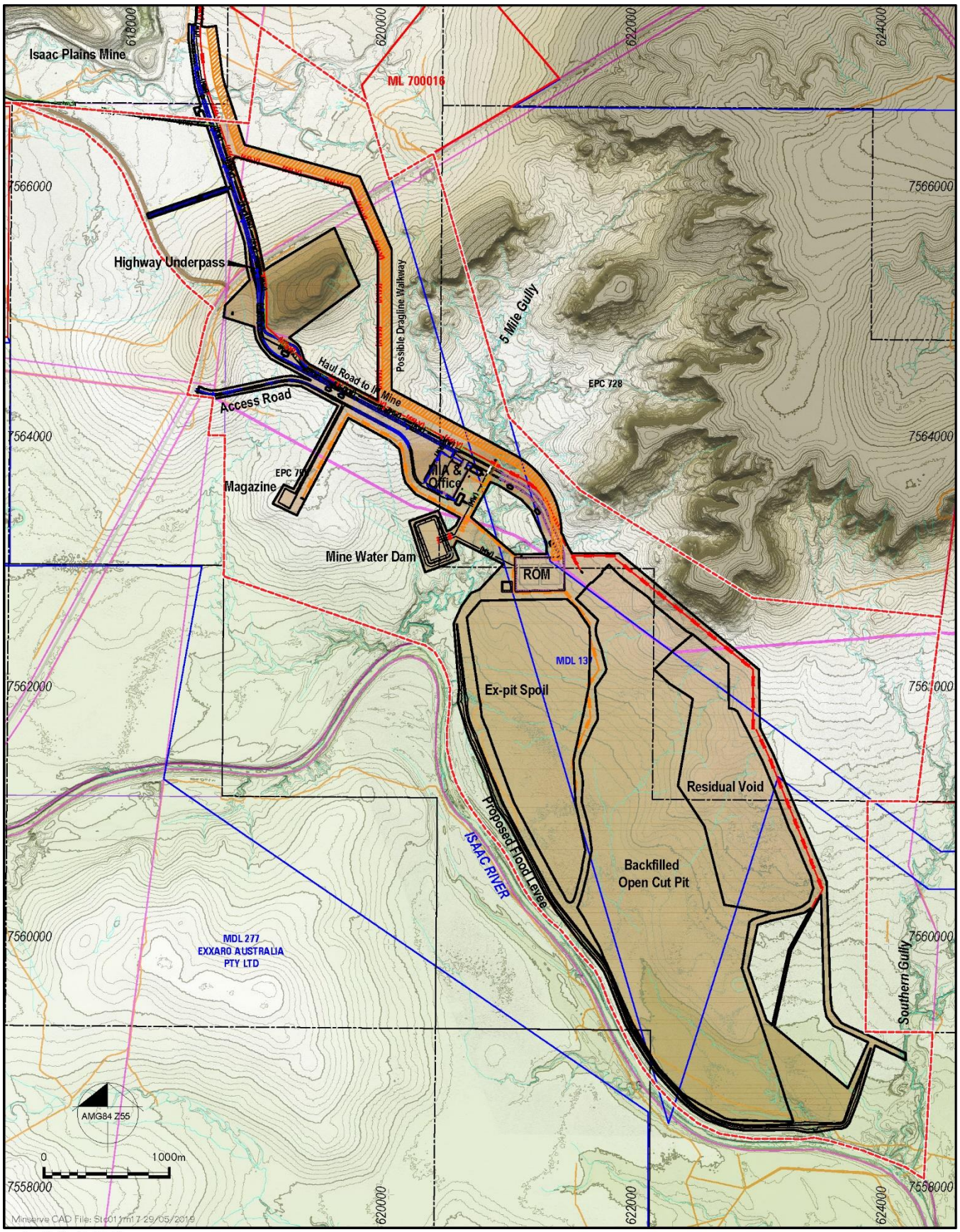
LEGEND

- Isaac Downs Project
- Isaac Regional Council
- Coal Mining Lease
- Drainage
- Roads - Major; Minor
- Railway

ISAAC DOWNS PROJECT

Project Location

Figure 1



LEGEND

- ML
- MDL
- EPC
- Proposed ID Project MLAs
- Project Footprint
- Drainage
- Roads - Major; Minor
- Railway
- Cadastral Boundary
- Topography 1m Contours

ISAAC DOWNS PROJECT
stanmore
IP South

Proposed Project Layout
Figure 2

Power will be supplied to the MIA, offices and dragline via a connection to the existing substation at IPM, which has spare capacity.

Water demand at Isaac Downs for dust suppression and vehicle washdowns will be obtained from mine affected and sediment affected water stored on site. If water for dust suppression is not available at Isaac Downs it will be pumped, via a pipeline, from existing void and dam water storages at IPM. Raw water is currently supplied to IPM via the Eungella Burdekin water supply pipeline under contract with SunWater. The requirement for raw water at Isaac Downs will be limited to vehicle washdowns and fire-fighting water storage, for which there is supply capacity available under contract.

The water management strategy is for separation of mine affected water, sediment affected water and clean water. Clean water from upgradient of the mining activities will be diverted around the mine site. Mine affected water will be collected in the pit before transfer to a turkey's nest mine water dam or transfer via a water pipeline to an existing void storing mine water at IPM. Mine water will be released in accordance with approved release criteria linked to flows and water quality in the Isaac River. Sediment affected water will be captured in sediment dams, designed in accordance with relevant engineering standards, to allow settlement of sediments before release of water. Water from site water storages will be used for dust suppression.

Non-mining waste will be managed in accordance with existing methodologies at IPM, including use of licensed waste contractors.

Approximately 250 people will be employed during the construction phase, which is expected to last 6 – 12 months. Approximately 300 people will be employed during the operations phase. IPM employs approximately 230 people, and a similar workforce will be transitioned from IPM to Isaac Downs resulting in a near steady state workforce.

The accommodation strategy for the workforce is likely to be similar to the current strategy used by IPM, with the majority of the workforce residing in existing, local mining village accommodation and some workers residing in local towns, such as Moranbah.

The Project is expected to result in minimal changes to transportation requirements and existing traffic on public roads, when compared with traffic and transport generated by IPM, as Isaac Downs traffic and transport will be transitioned from IPM traffic and transport.

The operational land for the Project is shown in Figure 3 and comprises:

- Lot 5 GV132, privately owned freehold
- Lot 17 SP261431, privately owned freehold
- Peak Downs Highway, Department of Transport and Main Roads (DTMR)
- Lot 8 GV196, Quarry Reserve, DTMR as Trustee

For the purposes of land access for the Project impact assessment Stanmore holds underlying mining tenements, or has agreement with third party underlying tenement holders to lodge mining lease applications, in the Project area and has entered into agreements with the relevant landholders. Mining lease applications will be made over all or parts of the operational land.

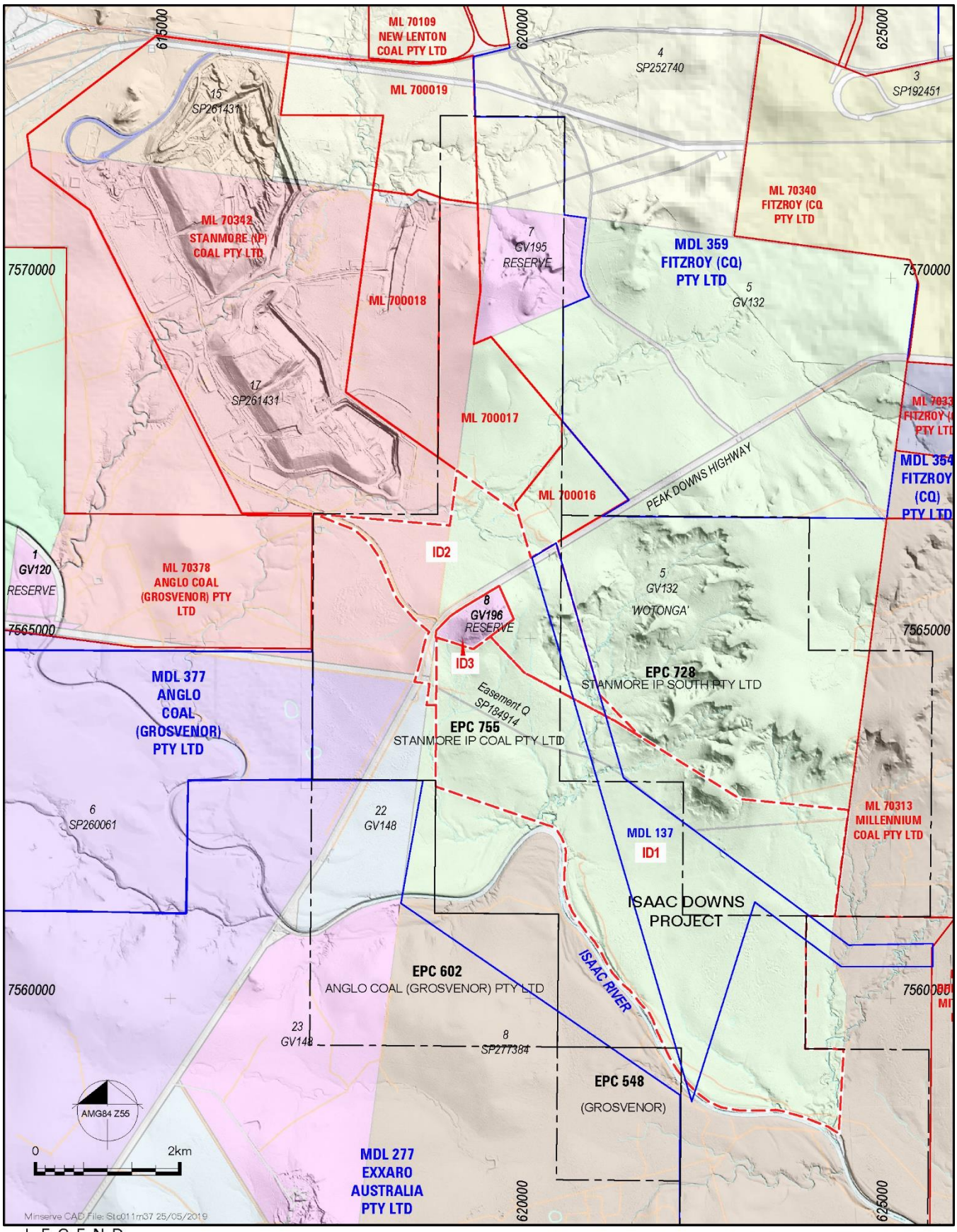
1.2.2 EIS assessment process

On 05 April 2019 the department approved an application for STANMORE IP SOUTH PTY LTD to voluntarily prepare an EIS under the EP Act for the Isaac Downs Project. Under section 159 of the EP Act, the EIS will form the application documents for the requirements of chapter 3 of the EP Act. This is provided that the environmental risks of the activity or way the activity will be carried out, do not change between the time the voluntary EIS was completed under the EP Act and when the EA application was made.

The proposed project was determined to be a controlled action (EPBC 2019/8413) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 14 May 2019. The controlling provisions *are sections 18 and 18A (listed threatened species and communities) and 24D and 24E (A water resource, in relation to coal seam gas development and large coal mining development).*

The EIS for the proposed project will be jointly assessed under the EP Act and the Commonwealth's EPBC Act using the EIS process under the EP Act in accordance with the assessment Bilateral agreement between the Australian Government and the State of Queensland.

Further information on the EIS process under the EP Act is described in the department's Guideline titled *'The environmental impact statement process for resource projects under the Environmental Protection Act 1994'* which



LEGEND

- IPM MLs
- Proposed ID Project MLAs
- MDL
- EPC
- Drainage
- Roads - Major; Minor
- Railway
- Cadastral Boundary

ISAAC DOWNS PROJECT
stanmore IP South

Properties
Figure 3

is available on the department's website[2].

2 Content requirements of the EIS for the proposed Isaac Downs project

The following sections outline the information requirements of an EIS under the EP Act for the proposed Isaac Downs Project. It is not necessary for the EIS to follow the specific structure outlined below, but the relevant requirements for each section must be included in the EIS.

3 Glossary

Provide a glossary of terms and a list of acronyms and abbreviations at the start of the EIS.

4 Executive summary

The EIS must include an executive summary which describes the proposed project and conveys the most important aspects and environmental management commitments relating to the proposed project in a concise and readable form.

5 Introduction

The introduction of the EIS must clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It should include an overview of the structure of the document.

5.1 Project proponent

Provide information about the proponent(s) and their business, including:

- the proponent's full name, street and postal address, and Australian Business Number, including details of any joint venture partners
- the nature and extent of the proponent's business activities
- proponent's environmental record, including a list of any breach of relevant environmental laws during the previous 10 years
- the proponent's environmental, health, safety and community policies.

5.2 The environmental impact statement process

Outline the steps of the EIS process, noting which milestones have been completed, and an estimated completion date for each remaining EIS stage. Highlight the steps in which the public will have the opportunity to provide input or comment. This information is required to ensure readers are informed of the EIS process and are aware of their opportunities for input and commenting.

Inform the reader how and when properly made public submissions on the EIS can be made, and outline how the submissions are taken into account in the decision-making process.

5.3 Project approvals process

Describe all approvals under federal, state or local legislation that are required to enable the proposed project to be constructed and operated, and note the legislation under which the approvals are assessed and issued. This information must explain how the EIS fits into the assessment and approval processes for the EA and other

[2] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/documents/eis-process-guideline-em1375.pdf

approvals required of the proposed project before construction and operations can start[3].

As this proposed project is to be assessed under the bilateral agreement between the Australian Government and the State of Queensland, describe the approvals process under the EPBC Act.

6 Consultation process

Describe the consultation that has taken place and how responses from stakeholders, including government agencies and members of the community, have been incorporated into the design and outcomes of the proposed project.

Describe any proposed future consultation activities, and outline how the results of that consultation will be used in the ongoing management of the proposed project.

Provide information on the development and outcomes of the implementation of consultation for the people and organisations identified as affected or interested persons and stakeholders for the proposed project. Describe issues of potential concern to all stakeholders at various stages of the proposed project from project planning to commencement, project operations and decommissioning. The description of the consultation should at least include the following matters:

- the objectives of the consultation process
- timing of consultation
- the number and interests of the people and organisations involved in the consultation (particularly the affected and interested persons defined in sections 38 and 41 of the EP Act)
- methods of consultation and communication
- reporting and feedback methods of the consultation process
- an assessment explaining how the consultation objectives have been met
- an analysis of the issues raised and their completed or planned resolution, including any alterations to the proposed project as a result of the received feedback.

7 Proposed project description and alternatives

Describe all aspects of the proposed project that are covered by the EIS's assessment. If there are any aspects of the proposed project that would be assessed separately, describe what they are, and how they would be assessed and approved.

The project description should include all on and off lease activities relevant to the proposed project including construction, operation and decommissioning activities. If the delivery of the proposed project is to be staged, the nature and timing of the stages should be fully described.

7.1 Proposed project

Describe and illustrate the following specific information about the proposed project, including but not limited to:

- proposed project title
- proposed project objectives
- expected capital expenditure
- rationale for the proposed project
- proposed project description, including the nature and scale of all project components and activities
- whether it is a greenfield or brownfield site

[3] Guidance on typical associated approvals can be accessed from https://www.business.qld.gov.au/industry

- power and water supply
- transport requirements
- regional and local context of the proposed project's footprint, including maps at suitable scales
- proposed timing of the development, including construction staging, likely schedule of works and anticipated mine life (if appropriate)
- relationship to other major projects or developments of which the proponent should reasonably be aware
- the workforce numbers for all project phases
- where personnel would be accommodated and the likely recruitment and rostering arrangements to be adopted
- proposed travel arrangements of the workforce to and from work, including use of a fly-in-fly-out (FIFO) workforce.

7.2 Site description

Provide real property descriptions of the proposed project land and adjacent properties, any easements, any existing underlying resource tenures, and identification number of any resource activity lease for the proposed project land that is subject to application.

Describe and illustrate with scaled maps the key infrastructure in and around the site, including state-controlled and local roads, rail lines and loading yards, airfields, ports or jetties, electricity transmission infrastructure, pipelines, and any other infrastructure in the region relevant to the proposed project.

Describe and illustrate the topography of the proposed project site and surrounding area, and highlight and identify any significant features shown on the maps. Map the location and boundaries of the proposed project's footprint including all infrastructure elements and development necessary for the proposed project. Show all key aspects including excavations, stockpiles, areas of fill, services infrastructure, plant locations, water or tailings storages, buildings, bridges and culvert, haul and access roads, causeways, and stockpile areas,. Include discussion of any environmental design features of these facilities including bunding of storage facilities.

Describe and map in plan and cross-sections the geology and terrestrial landforms of the proposed project area. Indicate the boundaries of water catchments that are significant for the drainage of the site. Show geological structures, such as aquifers, faults and economic resources that could have an influence on, or be influenced by, the proposed project's activities.

Describe and illustrate the precise location of the proposed project in relation to any designated and protected areas and waterbodies. This is to include the location of any proposed buffers surrounding the working areas; and lands identified for conservation, either through retention in their current natural state or to be rehabilitated.

Describe, map and illustrate soil types and profiles of the proposed project area at a scale relevant to the site. Identify soils that would require particular management due to wetness, erosivity, depth, acidity, salinity or other feature, including acid sulfate soils.

Describe with concept and layout plans, in both plan- and cross-section views, requirements for constructing, upgrading or relocating all infrastructure associated with the proposed project. Show the locations of any necessary infrastructure easements on the plans, including infrastructure such as roads, rail (and the rail corridor), level crossings, conveyors, bridges, tracks and pathways, dams and weirs, bore fields, power lines and other cables, wireless technology (such as microwave telecommunications), and pipelines for any services, whether underground or above.

7.3 Proposed construction and operations

Describe the following information about the proposed project, provide maps and concept and layout plans for the following, if applicable to the proposed project:

- existing land uses and any previous land use that might have affected or contaminated the land
- existing buildings, infrastructure and easements on the potentially affected land
- all pre-construction activities (including vegetation clearing, site access, interference with watercourses, wetlands and floodplain areas)
- the proposed construction methods, associated equipment and techniques
- road and rail infrastructure, and stock routes, including new constructions, closures and/or realignments

- the location, design and capacity of all other required supporting infrastructure, including water supply and storage, sewerage, electricity from the grid, generators and fuels (whether gas, liquid and/or solid), power stations, and telecommunications
- changes to watercourses, flooding and overland flow on or off the site, including water diversions,. crossings, flood levees, water off-takes and, locations of any proposed water discharge points
- any take of surface and groundwater (both direct and in-direct)
- proposed tailings management and storage
- any infrastructure alternatives, justified in terms of ecologically sustainable development (including energy and water conservation)
- days and hours of construction and operation
- proposed mine life, amount of resources to be mined and the resource base including total seam thickness and seam depths
- mining sequence and cross sections showing profiles and geological strata and faults
- the planned recovery of resources including the location of any resources not intended to be mined that may be sterilised during mining activity or from related infrastructure
- the proposed methods, equipment and techniques for resource separation, beneficiation and processing
- the sequencing and staging of activities
- the proposed methods and facilities to be used for the storage, processing, transfer, and loading of product
- the capacity of high-impact plant and equipment, their chemical and physical processes, and chemicals or hazardous materials to be used
- any activity that would otherwise be a prescribed environmentally relevant activity if it were not undertaken on a mining or petroleum lease
- any new borrow pits, stream bed excavations, or quarry and screening operations that may be required to service construction or operation of the proposed project.

7.4 Feasible alternatives

Present feasible alternatives of the proposed project's configuration, including conceptual, technological and locality alternatives to the proposed project and individual elements that may improve environmental outcomes. Summarise the comparative environmental, social and economic impacts of each alternative, with particular regard to the principles of ecologically sustainable development.

Discuss alternatives in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action while rejecting others.

Discuss the environmental, social and economic consequences of not proceeding with the proposed project.

8 The environmental impact assessment process

For each project specific matter outlined in section 9, the EIS must identify and describe the relevant environmental values, assess potential adverse and beneficial environmental, economic and social impacts of the proposed project; and outline the management, monitoring, planning and other measures proposed to avoid, minimise and/or mitigate any adverse environmental impacts of the proposed project. This must be addressed within the scope of the following requirements.

8.1 Environmental values

For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act.

Identify and describe the values that must be protected for all the relevant matters including:

- environmental values specified in the EP Act, the EP Regulation (e.g. environmental objectives and performance outcomes as defined in schedule 5, part 3, tables 1 and 2), environmental protection policies (EPPs) and associated guidelines

- values under other State legislation, policies and guidelines including the *Vegetation Management Act 1999*, the *Nature Conservation Act 1992*, the *Regional Planning Interests Act 2014*
- values identified in the project specific matters in section 9.

Consider all available baseline information relevant to the environmental risks of the proposed project, including seasonal and long term variations. Describe the quality of all information, in particular the source of the information, how recent the information is, how the reliability of the information was tested, and any assumptions and uncertainties in the information.

8.2 Impact assessment

Assess the impacts of the proposed project on environmental values. This includes demonstrating that the proposed project meets the environmental objectives and outcomes for each matter in section 9 and the environmental objectives and performance outcomes for any matters listed in Schedule 5 of the EP Regulation.

Impact assessment must address:

- short-, medium- and long-term scenarios
- the scale of an impact, including but not limited to:
    - the impact's intensity and duration
    - cumulative effects of the proposed project in combination with other major projects or developments of which the proponent should reasonably be aware
    - the risk of environmental harm
    - avoidance, mitigation and management strategies and if necessary, offsets provisions
    - the potential for unforeseen impacts
    - the risks associated with unlikely but potentially major impacts
    - direct, indirect, secondary, permanent, temporary, unknown, unpredictable and/or irreversible impacts
    - both positive and negative impacts
    - impact interactions.

8.3 Cumulative impacts

Assess the cumulative impacts of the proposed project on environmental values. Every effort should be made to find information from all sources relevant to the assessment of cumulative impacts including other major projects or developments of which the proponent should reasonably be aware. The EIS must outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.

Impact assessment must address cumulative impacts, including but not limited to:

- environmental values of land, air and water, public health and the health of terrestrial and aquatic ecosystems
- environmental values over time or in combination with other impacts in the dimensions of scale, intensity, duration or frequency of the impacts
- impacts created by the activities on other adjacent, upstream and downstream developments and infrastructure, and landholders.

8.4 Management

Propose and describe avoidance, mitigation and management strategies for the protection or enhancement of identified environmental values. Proposed strategies must:

- adhere to the department's management hierarchy: (a) to avoid; (b) to minimise or mitigate; once (a) and (b) have been applied, (c) if necessary and possible, to offset
- include an assessment of the expected or predicted effectiveness, of the mitigation measures for dealing with the proposed project's relevant impacts
- any statutory or policy basis for the mitigation measures

- include an adaptive management approach to provide confidence that, based on current technologies, the impacts can be effectively managed over the long-term
- be described in context of the department's model conditions and/or site-specific, outcome-focussed conditions that can be measured and audited.

For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management that would apply.

Demonstrate that the design of the proposed project and its predicted outcomes:

- meet the environmental objectives and outcomes listed in section 9 for each matter and the performance outcomes stated in Schedule 5 of the EP Regulation
- are consistent with best practice environmental management during construction, operation, and decommissioning of the proposed project
- meet all statutory and regulatory requirements of the federal, state and local government, including any relevant plans, strategies, policies and guidelines.

8.5 Conditions and commitments

Sufficient evidence and detail must be provided in the EIS (through studies, proposed management measures and supporting information):

- to demonstrate that the predicted outcomes for the proposed project can be achieved
- to meet the requirements of sections 125 and 126A of the EP Act as relevant to the specific project
- for the administering authority to make recommendations about the suitability of the proposed project, assess whether an approval should be granted and recommend draft conditions for inclusion on relevant approvals.

8.6 Critical matters

The detail in which the EIS deals with all matters relevant to the proposed project should be proportional to the scale of the impacts on environmental values. When determining the scale of an impact, consider the impact's intensity, duration, cumulative effect, irreversibility, the risk of environmental harm, management strategies and offset provisions.

A critical matter is a project specific matter listed in section 9 that has one or more of the following characteristics:

- It has a high or medium probability of causing serious or material environmental harm, or a high probability of causing an environmental nuisance.
- It is considered important by the administering authority, and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or the activity has been the subject of extensive media coverage.
- It is relevant to a controlling provision under the EPBC Act.
- It raises obligations under any other legislation applicable for the proposed project (e.g. *Water Act 2000*).

The final scope of critical matters will be determined by the administering authority when finalising the TOR. However, if a new additional critical matter becomes apparent after the final TOR are issued, the EIS must address that new matter.

8.6.1 Critical environmental matters identified for this proposed project which the EIS must give priority are:

- Land
- Water Resources
- Water Quality
- Flooding
- Flora and fauna
- Regulated structures

- Matters of National Environmental Significance
- Matters of State Environmental Significance

9 Project specific matters

9.1 Climate

Describe the proposed project area's climate patterns that are relevant to the environmental impact assessment, with particular regard to the proposed project's discharges to water and air, and the propagation of noise. Climate data should be provided in a statistical form including long-term averages and extreme values. It should also be illustrated by bar charts, wind rose diagrams or other relevant graphic means as necessary.

Assess the vulnerability of the area to natural and induced hazards, including floods, bushfires and cyclones. Consider the relative frequency and magnitude of these events together with the risk they pose to the construction, operation and decommissioning of the proposed project, as well as the rehabilitation of the site. Measures that would be taken to minimise the risks of these events should be described.

Assess the proposed project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and, extreme weather events). Describe possible preferred and alternative adaptation strategies based on climate change projections for the region to minimise the risk of impacts from climate change to the proposed project.

9.2 Land

Critical matter

Environmental objective and outcomes
The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
The choice of the site, at which the activity is to be carried out, avoids or minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.
The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.
The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.

Impact assessment

Conduct the impact assessment in accordance with the latest version of the department's *EIS information guideline—Land*[4], *DAFF Environmental impact assessment companion guide*' (Department of Agriculture, Fisheries and Forestry, August 2014[5]), DILGP's *RPI Act statutory guideline 11/16 companion guide*[6] and, if any quarry material is needed for construction, department's *EIS information guideline—Quarry material*[7]. Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

Describe potential impacts of the proposed land uses, taking into consideration the proposed measures that would be used to avoid or minimise impacts. The impact prediction must address the following matters:

- Any changes to the landscape and its associated visual amenity in and around the proposed project area.

[4] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[5] https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide/resource/7b1825c4-5e42-4cf8-aa2d-7fa55c2f5e4c

[6] http://www.dilgp.qld.gov.au/resources/guideline/rpi-guideline-11-16-dilgp-companion-guide.pdf

[7] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

- Any existing or proposed mining tenement under the *Mineral Resources Act 1989*, petroleum authority under the *Petroleum and Gas (Production and Safety) Act 2004*, petroleum tenure under the *Petroleum Act 1923*, geothermal tenure under the *Geothermal Energy Act 2010* and greenhouse gas tenure under the *Greenhouse Gas Storage Act 2009* overlying or adjacent to the proposed project site.
- Temporary and permanent changes to land uses of the proposed project site and adjacent areas, considering:
    - actual and potential agricultural uses
    - regional plans and local government planning schemes
    - any Key Resources Areas that were identified as containing important extractive resources of state or regional significance which the state considers worthy of protection[8][9]
    - strategic cropping land, priority agricultural areas, priority living area and strategic environmental areas under the *Regional Planning Interests Act 2014* and the trigger map for strategic cropping land[10]
    - findings of the Agricultural Land Audit[11]
    - constraints to the expansion of existing and potential agricultural land uses.
- Identify any existing or proposed incompatible land uses within and adjacent to the site, and including the impacts on economic resources and the future availability and viability of the resource including extraction, processing and transport location to markets.
- Identify any infrastructure proposed to be located within, or which may have impacts on, the stock route network[12][13] associated with the *Land Protection (Pest and Stock Route Management Act) 2002.*

Assess the proposed project against the requirements of the *Regional Planning Interests Act 2014*[14]. Further advice is provided in DILGP's *RPI Act statutory guideline 11/16 companion guide* (Department of Infrastructure, Local Government and Planning, July 2017[15]) and the *DAFF Environmental impact assessment companion guide* (Department of Agriculture, Fisheries and Forestry, August 2014[16]).

Propose suitable measures to avoid or minimise impacts related to land use.

Show how land forms, during and after disturbance, will be stable over time and will meet any requirements of proposed project or property plans under the *Soil Conservation Act 1986*.

Detail any known or potential sources of contaminated land that could be impacted by the proposed project. Describe how any proposed land use may result in land becoming contaminated.

Identify existing or potential native title rights and interests possibly impacted by the proposed project and the potential for managing those impacts by an Indigenous Land Use Agreement or other measure in accordance with the *Native Title (Queensland) Act 1993* and consistent with the Queensland Government *Native title work Procedures*[17].

[8] https://www.business.qld.gov.au/industry/mining/quarries/key-resource-areas

[9] http://www.statedevelopment.qld.gov.au/resources/guideline/spp/spp-guideline-mining-extractive-resources.pdf

[10] https://www.dnrm.qld.gov.au/land/accessing-using-land/strategic-cropping-land

[11] https://www.daf.qld.gov.au/business-priorities/environment/ag-land-audit/how

[12] https://www.qld.gov.au/environment/land/stock-routes/about/

[13] https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0010/99622/stock-route-management-strategy.pdf

[14] http://www.dilgp.qld.gov.au/planning/regional-planning/regional-planning-interests-act.html

[15] http://www.dilgp.qld.gov.au/planning/regional-planning/rpi-act-forms-guidelines-and-fact-sheets.html

[16] https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide/resource/7b1825c4-5e42-4cf8-aa2d-7fa55c2f5e4c

[17] https://www.dnrm.qld.gov.au/land/indigenous-land/queensland-government-native-title-work-procedures

9.3 Rehabilitation

Environmental objective and outcomes
Land disturbed by mining activities will be rehabilitated progressively as it becomes available, to minimise the risks of environmental impacts and reduce cumulative areas of disturbed land. The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna. The activity is operated in a way that disturbed areas will be rehabilitated or restored to achieve sites that are safe to humans and wildlife, non-polluting, stable, and able to sustain an appropriate land use after rehabilitation or restoration The progress and outcomes of progressive rehabilitation activities will be monitored and reported on to demonstrate how successful they have been in achieving progress towards the agreed final land use, and to inform corrective action where required.

Impact assessment

Address the requirements of *Mineral and Energy Resources (Financial Provisioning) Act 2018* to the extent that the requirements of the legislation, including transitional arrangements, apply to the proposed project.

Demonstrate that the rehabilitation of the environment disturbed by construction, operation, and decommissioning of the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

Demonstrate that the proposed rehabilitation is consistent with the *Mined land rehabilitation policy*[18] and relevant guidelines[19] and best practice approaches about the strategies and methods for progressive and final rehabilitation.

9.3.1 Progressive rehabilitation plan

Provide a progressive rehabilitation plan for the project that shows how and where mining activities (and other related environmentally relevant activities) would be carried out on land in a way that maximises progressive rehabilitation of land to achieve the rehabilitation goals[20]. The plan must provide for the condition and land use suitability to which land must be rehabilitated, before the environmental authority can be surrendered.

The progressive rehabilitation plan must be comprised of three components:

1. progressive rehabilitation plan overview and justification
2. rehabilitation programme (in tabular form) with time-based milestones for actions to progressively achieve the rehabilitation goal
3. supporting technical studies which set out the information, investigations and assumptions required to develop and implement the rehabilitation programme.

9.3.1.1 Progressive rehabilitation plan overview and justification

Provide an overview and justification of the progressive rehabilitation plan, by addressing the following:

- describe each resource tenure, including the area of each tenure
- describe the relevant activities to which the application relates, the likely duration of the relevant activities, and how and where the activities would be carried out including maps and dimensionally accurate spatial, topographical and landscape data for the project site (including the surrounding landscape) that shows all aspects of the project, including changes to the site and surrounding landscape over time due to mining, construction and rehabilitation activities on the site

[18] https://www.ehp.qld.gov.au/management/pdf/mined-land-rehabilitation-policy.pd

[19] See Appendix 2 and further guidance at https://environment.des.qld.gov.au/land/mining/guidelines.html

[20] For the purposes of section 9.3, rehabilitation goals are sites that are safe, stable, non-polluting and able to sustain an appropriate final land use(s).

- detail the consultation undertaken by the proponent in developing the progressive rehabilitation plan and how the proponent would undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan
- state the extent to which the final land use(s) identified by the plan are consistent with the outcome of consultation with the community and any strategies or plans for the land of a local government, the State or the Commonwealth
- for each proposed final land use, state the proposed methods or techniques for rehabilitating the land to achieve the rehabilitation goals in a way that supports the milestones as proposed in the rehabilitation programme
- for any proposed residual void:
    - demonstrate that these areas are limited in number and size to the extent possible
    - demonstrate that these areas are located to prevent or minimise environmental harm by having regard to all reasonably practical alternatives for the location, and the nature of the environmental harm that may be caused at the proposed location, and the sensitivity of the environment surrounding the proposed location
    - demonstrate that these areas are capable of being managed to achieve best practice management and minimise environmental harm.
    - demonstrate that all reasonable attempts have been made to revise mine planning and schedule rehabilitation activities in a way that optimises the final land use for the rehabilitated landform.
- demonstrate that each proposed final land use is appropriate for the region in which the land is located by stating that the use will be:
    - compatible with the use of land in the surrounding region
    - viable having regard to the use of land in the surrounding region
    - sustainable
- demonstrate how the amount of land disturbed at any one time, and the residual loss of land and water bodies with ecological or productive value, will be minimised
- demonstrate that the proposed final landform re-establishes a functional hydrologic system that prevents erosion, maximises connectivity, minimises upstream and downstream surface and groundwater contamination in the long term and is consistent with the surrounding natural topography and landscape
- include drawings, figures and maps along with spatial, geospatial, topographic and other data that illustrate the final landform(s) in a way that can be viewed
- include maps and any spatial data at suitable scales showing:
    - for the life of the proposed project include the location of disturbance areas; the relevant mine infrastructure; and the sequence and timing of mining and progressive rehabilitation
    - the proposed final topography, with contours at suitable intervals, showing where proposed residual voids, mined areas, and uncompacted overburden would lie in relation to flood levels up to and including the ‘probable maximum flood level’ based on the Bureau of Meteorology’s ‘probable maximum precipitation’ forecast for the locality
- identify the risks of rehabilitation goals not being achieved, and how the proponent intends to manage or minimise the risks
- include a monitoring and maintenance program that identifies and describes the monitoring systems that will be undertaken in order to demonstrate milestone and milestone criteria have been achieved.

9.3.1.2 Rehabilitation programme

As part of the progressive rehabilitation plan, provide a rehabilitation programme (presented as a table) that identifies the final land use(s) and outlines milestones and timing for progressive rehabilitation to achieve the proposed final land use(s).

The rehabilitation programme must outline milestones for each significant event or step necessary to rehabilitate the final land use area to achieve the rehabilitation goals.

For each milestone, provide criteria that demonstrate how the associated milestone will be achieved[21]. Milestones and their criteria must be consistent with the SMART principles[22].

For each final land use area, populate a table to provide:

- a description of the area (name, size in hectares, disturbance type (hardstand, stockpile, pit etc.), tenure, reference to associated map
- a reference to a map attached to the rehabilitation programme showing the final rehabilitation outcomes for that final land use area and the boundary of that final land use area, at a scale which allows for easy interpretation
- the date land becomes available for rehabilitation
- the milestones that will be required to achieve rehabilitation goals
- milestone criteria
- completion dates for each milestone.

9.3.1.3 Supporting technical studies and information

Provide reports (as appendices to the plan[23]) of the underlying information, technical investigations and assumptions used to develop the progressive rehabilitation plan and inform the implementation of the rehabilitation programme.

Examples of typical studies include:

- an assessment of the hydrogeology of the site to predict changes to surface and groundwater flows and exchange, and water quality impacts from the mining activities
- an assessment of flooding susceptibility and influence
- where flooding is a consideration, develop a hydrologic model of the catchment and a hydraulic model of the proposed mining area to assess flood impacts
- an assessment of soil and capping material to understand and develop a soil conservation strategy, topsoil management and rehabilitation methodologies[24]
- characterisation of mine wastes that describes the likely physical behaviour and chemical reactivity of the waste materials under the conditions in which they would be stored
- landform design that describes the final landform, how it will develop in stages, achieve long-term stability and meet the requirements of the appropriate final land use(s).
- cover system design to manage mined and waste material in a manner that ensures contaminants are not released to the receiving environment
- a water management plan for surface and groundwater resources.
- a revegetation plan to ensure the self-sustaining vegetation communities that are appropriate for the appropriate final land use(s) will be achieved.

---

[21] Milestone criteria are necessary to ensure progressive rehabilitation and closure activities are completed, and are not the same as completion criteria (which demonstrate the expectations at relinquishment)

[22] SMART milestones are:

- **S**pecific – it is clear what must be done
- **M**easurable – it must be possible to know when it has been achieved
- **A**chievable – it is capable of being achieved
- **R**easonable/relevant – there is a clear connection between the milestone and the desired outcomes. The requirement is reasonable
- **T**ime Specific – it is clear when the milestone must be completed by

[23] Ensure that the progressive rehabilitation plan is based on sufficient baseline information to describe,: site topography; climate; the geological setting; site hydrology and fluvial networks, groundwater levels, connectivity and properties; soil types, properties and productivity; land stability (pre-existing and predisposition to ongoing issues); vegetation communities, protected plants, fauna presence and populations and other ecological data; pre-mining land use and identification of underlying land holders

[24] Integrated soil and waste rock characterisation and mapping should form the foundation of rehabilitation strategies

9.4 Water

Critical matter

9.4.1 Water quality

Environmental objective and outcomes
The activity will be operated in a way that protects environmental values of waters.
The activity will be operated in a way that protects the environmental values of groundwater and any associated surface ecological systems.
The activity will be managed in a way that prevents or minimises adverse effects on wetlands.

Impact assessment

Conduct the impact assessment in accordance with the latest version of the department's *EIS information guideline—Water,* department's *Water quality guidelines*[25]*,* department's *Water monitoring and sampling manual*[26]*,* and the *Groundwater quality assessment guideline* (Department of Science, Information Technology and Innovation, March 2017[27]). Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

With reference to the Environmental Protection (Water) Policy 2009 and section 9 the EP Act, identify the environmental values of surface waters within the proposed project area and immediately downstream that may be affected by the proposed project, including any human uses and cultural values of water.

Define the relevant water quality objectives applicable to the environmental values, and demonstrate how these will be met by the proposed project during construction, operation, decommissioning and following proposed project completion. Where water quality objectives are not available they should be derived according to the *Queensland water quality guidelines*, and include any semi-permanent or permanent pools, including stock water.

Detail the chemical, physical and biological characteristics of surface waters and groundwater within the area that may be affected by the proposed project and at suitable reference locations using sufficient data to define natural variation, including seasonal variation.

Describe the quantity, quality, location, duration and timing[28] of all potential and/or proposed releases of contaminants. Releases may include controlled water discharges to surface water streams, uncontrolled discharges when the design capacity of storages is exceeded, spills of products during loading or transportation, contaminated run-off from operational areas of the site (including seepage from waste rock dumps), or run-off from disturbed acid sulfate soils.

Assess the potential impact of any releases from point or diffuse sources on all relevant environmental values and water quality objectives of the receiving environment. The impact assessment should consider the resultant quality and hydrology of receiving waters and the assimilative capacity of the receiving environment.

Describe how water quality objectives would be achieved and environmental impacts would be avoided or minimised through the implementation of management strategies that comply with the management hierarchy and management intent of the Environmental Protection (Water) Policy 2009. Appropriate management strategies may include the use of erosion and sediment control practices, and the separation of clean storm water run-off from the run-off from disturbed and operational areas of the site.

Describe how monitoring would be used to demonstrate that objectives were being assessed, audited and met. For example, provide measurable criteria, standards and/or indicators that will be used to assess the condition of the ecological values and health of surface water environments. Propose corrective actions to be used if objectives are not likely to be met.

[25] https://environment.des.qld.gov.au/water/guidelines/

[26] https://environment.des.qld.gov.au/water/monitoring/sampling-manual/#physical_and_chemical_assessment

[27] https://publications.qld.gov.au/en/dataset/groundwater-quality-assessment-guideline

[28] Duration and timing are important aspects of the risk characteristics that affect the impacts of mine and CSG water releases; e.g. for how long will water be released in total and when will it occur with respect to existing 'natural' flows

9.4.2 Water resources

Environmental objective and outcomes
With regard to water resources, the proposed project should meet the following objectives: • equitable, sustainable and efficient use of water resources • maintenance of environmental flows and water quality to support the long term condition and viability of terrestrial, riverine, wetland, lacustrine, estuarine, coastal and marine ecosystems • maintenance of the stability of beds and banks of watercourses, and the shores of waterbodies, estuaries and the coast • maintenance of supply to existing users of surface and groundwater resources.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Water*[29]. Address the requirements of section 126A of the EP Act.

Describe present and potential users and uses of water in areas potentially affected by the proposed project, including municipal, agricultural[30], industrial, recreational and environmental uses of water.

Describe the quality, quantity and significance of groundwater in the proposed project area and any surrounding area potentially affected by the proposed project's activities. Include the following:

- characterise: the nature, type, geology/stratigraphy and depth to and thickness of the aquifers; their transmissivity; and value as water supply sources
- analyse the movement of underground water to and from the aquifer(s), including how the aquifer(s) interacts with other aquifers and surface water
- characterise the quality and volume of the groundwater including seasonal variations of groundwater levels
- provide surveys of existing groundwater supply facilities (e.g. bores, wells, or excavations).

Consistent with the DNRM's guideline *Quantifying the volume of associated water taken under a mining lease or mineral development licence*[31] (2017), model and describe the inputs, movements, exchanges and outputs of surface water and groundwater that would or may be affected by the proposed project. The models should take into account the climatic conditions at the site, assess the potential impacts on water resources and include a site water balance.

The groundwater model should be peer-reviewed by an independent appropriately qualified person(s) consistent with the *Australian groundwater modelling guidelines*[32] (Australian Government National Water Commission, June 2012).

Provide a description of the proposed project's impacts at the local scale and in a regional context including:

- changes in flow regimes from diversions, water take and discharges
- groundwater draw-down and recharge
- management of mine affected water
- alterations to riparian vegetation and bank and channel morphology
- direct and indirect impacts arising from the development.

[29] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[30] https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide/resource/7b1825c4-5e42-4cf8-aa2d-7fa55c2f5e4c

[31] https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0004/1256458/guideline-quantifying-volume.pdf

[32] http://www.groundwater.com.au/media/W1siZiIsIjIwMTIvMTAvMTcvMjFfNDFfMzZfOTYwX0F1c3RyYWxpYW5fZ3JvdW5kd2F0ZXJfbW9kZWxsaW5nX2d1aWRlbGluZXMucGRmIl1d/Australian-groundwater-modelling-guidelines.pdf

Provide a mine water management plan, for the life of the proposed project, which details management strategies of mine-affected water, sediment-affected water and drainage from areas not disturbed by mining activities. Any water taken off site for further use must also be accounted for and must be consistent with the General Use Approval for associated water (including coal seam gas water).

Specifically address whether or not the proposed project would take water from, or affect recharge to, aquifers of the Great Artesian Basin. Identify any approval or allocation that would be needed under the Water Act 2000.

Describe the practices and procedures that would be used to avoid or minimise impacts on water resources.

Describe how 'make good' provisions would apply to any water users that may be adversely affected by the proposed project. Propose a network of groundwater monitoring bores before and after the commencement of the proposed project that would be suitable for the purposes of monitoring groundwater quality and hydrology impacts that may occur as a result of the resource activity. Include details on investigation timeframes and actions if exceedances are detected.

Include maps of suitable scale showing the location of diversions and other water-related infrastructure in relation to resource infrastructure. Detail any significant diversion or interception of overland flow, including the effects of subsidence.

Describe the options for supplying water to the proposed project and assess any potential consequential impacts in relation to the objectives of any water plan and resource operations plan that may apply.

Describe the proposed supply of potable water for the proposed project, including temporary demands during the construction period. Also describe on-site storage and treatment requirements for waste water from accommodation and/or offices and workshops.

9.4.2.1 The Independent Expert Scientific Committee

The EIS must include a specific section responding to the information requirements contained in the IESC's *Information guidelines for proposals relating to the development of coal seam gas and large coal mines where there is a significant impact on water resources* (Commonwealth of Australia, 2015[33]*).*

9.4.3 Flooding

Environmental objective and outcomes
The construction and operation of the proposed project should aim to ensure that the risk and potential adverse impacts from flooding are avoided, minimised or mitigated to protect people, property and the environment.

Impact assessment

Describe the history of flooding onsite and in proximity to the site. Describe current flood risk for a range of annual exceedance probabilities up to the probable maximum flood for the proposed project site. Use flood modelling to assess how the proposed project may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site. The assessment should consider all infrastructure associated with the proposed project including levees, roads, and linear infrastructure, and all proposed measures to avoid or minimise impacts.

Evidence should be provided to demonstrate that the securing of storage containers of hazardous contaminants during flood events meets the requirements of schedule 5, table 2 of the EP Regulation.

Describe, illustrate and assess where any proposed infrastructure, including tailing storage facilities or dams, voids and waste rock dumps, disturbed and rehabilitated areas, would lie in relation to the extent to any modelled flood level, including the probable maximum flood level. Describe management actions to minimise impacts of flooding to mine infrastructure and manage in mine pit water post-flooding

Assess the proposed project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and extreme weather events). Describe possible adaptation strategies (preferred and alternative) based on climate change projections for the proposed project site.

[33] http://www.iesc.environment.gov.au/publications

9.5 Regulated structures

Critical matter

Environmental objective and outcomes
The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management[#].
The potential consequences of the failure of a regulated structure on human life and the environment require that the highest standards are used for their design, construction, operation, modification and decommissioning. The industry, government and the Australian National Committee on Large Dams Inc. have published several guidelines, which should be used to further develop objectives and outcomes for individual projects and the regulated structures they involve.

Impact assessment

Conduct the impact assessments on regulated structures in accordance with the latest version of the department's *EIS information guideline—Regulated structures*[34], department's Guideline on *Structures which are dams of levees constructed as part of environmentally relevant activities*[35], and department's *Manual for assessing hazard consequence categories and hydraulic performance of structures*[36].

Describe the purpose of all dams or levees proposed on the proposed project site. Show their locations on appropriately scaled maps, and provide plans and cross-sections, illustrating such features as embankment heights, spillways, discharge points, design storage allowances, and maximum volumes. Describe how storage structures and other infrastructure would be sited to avoid or minimise risks from flooding.

Where proposed project infrastructure comprises dams or other structures for storing potentially hazardous materials, undertake a consequence category assessment for each dam or levee, according to the criteria outlined in department's *Manual for assessing consequence categories and hydraulic performance of structures*. The assessment must be undertaken for the three different failure event scenarios described in department's manual, i.e. for seepage, overtopping and dam break. Regulated structures must comply with the *Manual for assessing consequence categories and hydraulic performance of structures* in accordance with schedule 5, table 2 of the EP Regulation.

Following the consequence category assessment, determine the consequence category ('low, significant, or high') according to table 1 of department's *Manual for assessing hazard categories and hydraulic performance of structures* and provide certified copies of the consequence category determination for each of the proposed dams or levees assessed.

Describe how risks associated with dam or storage failure, seepage through the floor, embankments of the dams, and/or with overtopping of the structures will be avoided, minimised or mitigated to protect people, property and the environment.

[34] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[35] https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-structures-dams-levees-eras.pdf

[36] https://environment.des.qld.gov.au/assets/documents/regulation/era-mn-assessing-consequence-hydraulic-performance.pdf

9.6 Flora and fauna

Critical matter

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
There will be no potential or actual adverse effect on a wetland as part of carrying out the activity.
The proposed project minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.
The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.
The proposed project manages the impacts on the environment by seeking to achieve ecological sustainability, including, but not limited to, protected wildlife and habitat.
Critical habitat receives special management considerations and protection through a management plan for the proposed project.
The proposed project avoids significant residual impacts to matters of national environmental significance (MNES) and matters of state environmental significance (MSES), mitigates impacts where they cannot be avoided, and offsets any residual impacts.
The construction, operation and decommissioning of the proposed project must be consistent with all statutory and regulatory requirements of the federal, state and local government and be consistent with their relevant plans, strategies, policies and guidelines that relate to the terrestrial and aquatic ecological environment.

Impact assessment

Describe the potential direct and indirect impacts on the biodiversity and natural environmental values of affected areas impacted by the construction, operation and decommissioning of the proposed project. Take into account any proposed avoidance and/or mitigation measures. The EIS should provide information based on relevant guidelines, including but not limited to the latest version of the department's *EIS information guidelines*[37] that cover *flora and fauna, aquatic ecology, groundwater dependent ecosystems, water, matters of national environmental significance,* and *biosecurity*.

Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

The assessment should include the following key elements:

- identification of all significant species and ecological communities, including MSES and MNES, listed flora and fauna species, and regional ecosystems, on the proposed project's site and in its vicinity
- terrestrial and aquatic ecosystems (including groundwater dependent ecosystems and subterranean fauna, e.g. stygofauna) and their interactions. Stygofauna assessment guidance is available through the department's *Background information on sampling bores and stygofauna*[38] and the Department of Science, Information Technology, Innovation and the Arts *Guideline for the environmental assessment of subterranean aquatic fauna*[39]
- biological diversity
- the integrity of ecological processes, including habitats of listed threatened, near threatened or special least-concern species
- connectivity of habitats and ecosystems
- the integrity of landscapes and places, including wilderness and similar natural places

[37] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[38] https://environment.des.qld.gov.au/water/monitoring/sampling-manual/pdf/biological-assessment-background-information-on-sampling-bores-for-stygofauna.pdf

[39] https://publications.qld.gov.au/dataset/subterranean-aquatic-fauna

- chronic, low-level exposure to contaminants or the bio-accumulation of contaminants
- direct and indirect impacts on terrestrial and aquatic species and ecosystems whether due to: vegetation clearing; hydrological changes; discharges of contaminants to water, air or land; noise; and other relevant matters.
- impacts of waterway barriers on fish passage in all waterways mapped on the Queensland Waterways for Waterway Barrier Works spatial data layer

Describe any actions of the proposed project that require an authority under the *Nature Conservation Act 1992*, and/or would be assessable development for the purposes of the *Vegetation Management Act 1999*, the *Regional Planning Interests Act 2014,* the *Fisheries Act 1994* and the *Planning Act 2016*[40]*.* Features to consider include regional ecosystems, environmentally sensitive areas, wetlands, nature refuges, protected areas and strategic environmental areas. Propose practical measures to avoid, minimise, mitigate and/or offset direct or indirect impacts on ecological environmental values.

Assess how the nominated quantitative indicators and standards may be achieved for nature conservation management. In particular, address measures to protect or preserve any listed threatened, near-threatened or special least concern species.

Propose measures that would avoid the need for waterway barriers, or propose measures to mitigate the impacts of their construction and operation.

Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. The assessment should take account of the role of buffer zones in maintaining and enhancing riparian vegetation to enhance water quality and habitat connectivity.

Propose rehabilitation success criteria, in relation to natural values, that would be used to measure the progressive rehabilitation of disturbed areas. Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Proposals for the rehabilitation of disturbed areas should, where appropriate and in accordance with the proposed land use, incorporate, in suitable habitat, provision of low shrubs, ground level hollow logs, stick piles, nest hollows, ground litter and fish passage and habitat.

Specifically address any obligations imposed by State or Commonwealth legislation or policy or international treaty obligations, such as the China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement, or Republic of Korea–Australia Migratory Bird Agreement.

9.6.1 Offsets

For any significant residual impact, propose offsets that are consistent with the following requirements as set out in applicable State and Commonwealth legislation or policies:

- Where a significant residual impact will occur on a prescribed environmental matter as outlined in the Environmental Offsets Regulation 2014, the offset proposal(s) must be consistent with the requirements of Queensland's *Environmental Offsets Act 2014* and the latest version of the Queensland Environmental Offsets Policy[41].
- Where Commonwealth offset policy requires an offset for significant residual impacts on a MNES, the offset proposal(s) must be consistent with the requirements of the EPBC Act Environmental Offsets Policy (October 2012), the *Offsets assessment guide* and relevant guidelines[42].

[40] This is notwithstanding that the *Vegetation Management Act 1999* does not apply to mining projects. Refer also to https://www.qld.gov.au/environment/land/vegetation/clearing/

[41] https://www.qld.gov.au/environment/pollution/management/offsets/

[42] http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy

9.6.2 Biosecurity

Environmental objective and outcomes
The construction, operation and decommissioning of the proposed project should ensure: • the introduction and spread of weeds, pests (including marine pests) and disease, pathogens and contaminants are avoided or minimised • existing weeds and pests, including marine pests, are controlled, including biosecurity threats and their management • the performance outcomes correspond to the relevant policies, legislation and guidelines, and that sufficient evidence is supplied (through studies and proposed management measures) to show these outcomes can be achieved.

Impact assessment

Conduct the impact assessment in accordance with the latest version of the department's *EIS information guideline—Biosecurity*[43].

Propose detailed measures to remove, control and limit the spread of pests, weeds disease, pathogens and contaminants on the proposed project site and any areas under the proponent's control, particularly declared plants and animals under Queensland's *Biosecurity Act 2014*, the Commonwealth *Biosecurity Act 2015* and weeds of national significance (WONS). Weed and pest animal management measures should be aligned with local government pest management priorities.

Detail a monitoring program that would audit the success of biosecurity measures, identify whether objectives have been met, and describe corrective actions to be used if monitoring indicates objectives are not being met.

9.7 Air

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of air.

Impact assessment

Describe the existing air environment at the proposed project site and the surrounding region.

Provide an emissions inventory and description of the characteristics of contaminants or materials that would be released from point and diffuse sources and fugitive emissions when carrying out the activity (point source and fugitive emissions). The description should address the construction, commissioning, operation, upset conditions, and closure of the proposed project.

Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

Predict the impacts of the releases from the activity on environmental values of the receiving environment using established and accepted methods and in accordance with the EP Regulation, *Environmental Protection (Air) Policy 2008 (EPP (Air)*, and the latest version of the department's *EIS information guideline—Air*[44]. The description of impacts should take into consideration the sensitivity and assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction must address the cumulative impact of any release with other known releases of contaminants, materials or wastes associated with existing development and possible future development (as described by approved plans and existing project approvals). It should also quantify the human health risk and amenity impacts associated with emissions from the proposed project for all contaminants whether or not they are covered by the *National Environmental Protection (Ambient Air Quality) Measure* or the *EPP (Air)* or not.

Describe the proposed mitigation measures to limit impacts from air emissions and how the proposed activity will be consistent with best practice environmental management. The EIS must address the compatibility of the proposed project's air emissions with existing or potential land uses in surrounding areas. Potential land uses might

[43] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[44] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

be gauged from the zonings of local planning schemes, State Development Areas or other relevant planning frameworks.

Describe how the proposed project's air emission objectives would be achieved, monitored, audited and reported, and how corrective actions would be managed for the life of the proposed project.

Proponents are responsible for determining if they have obligations under the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and ensuring that information regarding greenhouse gas emissions and energy production and consumption provided in the EIS is consistent with requirements of the NGER Act and its subordinate legislation[45].

Provide an inventory of projected annual emissions for each relevant greenhouse gas, with total emissions expressed in 'CO_2 equivalent' terms. Estimate emissions from upstream activities associated with the proposed project, including the fossil fuel based electricity to be used during construction, operation and decommissioning and briefly describe the methods used to make the estimates. The *National Greenhouse and Energy Reporting (Measurement) Determination 2008* provides methods and criteria for calculating greenhouse gas emissions and energy data under the NGER Act which can be used in combination with NGER technical guidelines[46] as a reference source for emission estimate methods and supplemented with information from other sources where practicable and appropriate.

Coal mining projects must include estimates of coal seam methane to be released as well as emissions resulting from such activities as transportation of products and consumables, and energy use at the proposed project site.

Assess the potential impacts of operations within the proposed project area on the state and national greenhouse gas inventories and propose greenhouse gas abatement measures, including:

- a description of the proposed preferred and alternative measures to avoid and/or minimise greenhouse gas emissions directly resulting from activities of the proposed project, including such activities as transportation of products and consumables, and energy use by the proposed project
- an assessment of how the preferred measures minimise emissions and achieve energy efficiency
- a comparison of the preferred measures for emission controls and energy consumption with best practice environmental management in the relevant sector of industry
- a description of any opportunities for further offsetting of greenhouse gas emissions through indirect means.

9.8 Noise and vibration

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of the acoustic environment.

Impact assessment

Describe and illustrate the locations of any sensitive receptors that are listed in Schedule 1 of the Environmental Protection (Noise) Policy 2008. Also describe any other environmental values that could be impacted by emissions from the proposed project.

Fully describe the sources and characteristics of noise and vibration that would be emitted during the construction, commissioning, operation, upset conditions, and closure of the proposed project.

Conduct a noise and vibration impact assessment in accordance with the latest version of the department's *EIS information guideline—Noise and vibration*[47]. The assessment must address low-frequency (<200 Hz) noise emissions and potential cumulative impact of the proposed project with other emissions of noise from any existing developments and known possible future development in the area.

Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

[45] http://www.cleanenergyregulator.gov.au/NGER

[46] http://www.environment.gov.au/climate-change/greenhouse-gas-measurement/nger/technical-guidelines

[47] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

Describe how the proposed activity would be managed to be consistent with best practice environmental management, including the control of background creep in noise as outlined in the *Environmental Protection (Noise) Policy 2009*. The EIS must address the compatibility of the proposed project's noise emissions with existing or potential land uses in surrounding areas. Potential land uses might be gauged from the zonings of local planning schemes, State Development Areas or other relevant planning frameworks.

Describe how the environmental management objectives for noise and vibrations would be achieved, monitored, audited and reported, and how corrective actions would be managed.

9.9 Waste management

Environmental objective and outcomes
Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.

Impact assessment

Conduct the impact assessment in accordance with the latest version of the department's *EIS information guidelines—Waste management*[48] and *Applications for activities with waste impacts* (ESR/2015/1836). Demonstrate that the proposed project can meet the environmental objectives and performance outcomes in Schedule 5 of the EP Regulation.

Describe all the expected waste streams from the proposed project activities during the construction, operational, rehabilitation and decommissioning phases of the proposed project. Waste streams for resource projects would typically include: waste rock, tailings and coarse rejects from mining and mineral processing; and brackish, saline or mine affected water from all types of resource projects.

Describe the quantity, and physical and chemical characteristics of each significant waste, any attributes that may affect its dispersal in the environment, and its associated risk of causing environmental harm.

Define and describe objectives and practical measures for protecting or enhancing environmental values from impacts from wastes.

Assess and describe the proposed management measures against the preferred waste management hierarchy, namely: avoid and reduce waste generation; cleaner production; reduce; recycle; reuse; reprocess and reclaim; waste to energy; treatment; disposal. This includes the generation and storage of waste.

Describe how nominated quantitative standards and indicators may be achieved for waste management, and how the achievement of the objectives would be monitored, audited and managed.

Detail waste management planning for the proposed project, in particular how measures have been applied to prevent or minimise environmental impacts due to waste at each stage of the proposed project.

For non-mining waste, use a material/energy flow analysis to provide details of natural resource use efficiency (such as energy and water), integrated processing design, and any co-generation of power and by-product reuse.

Detail the geochemistry of all waste rock, including spoil, tailings and rejects. Assess the potential risks associated with this waste stream and describe the management of progressive placement and any disposal strategy to minimise any potential impacts on environmental values of the proposed project area. Detail how high risk waste material will be managed in the rehabilitation plan.

Identify the quantity, quality and location of all potential discharges of water and contaminants by the proposed project, including treated wastewater and sewage. Describe whether the discharges would be from point sources (whether uncontrolled and controlled discharges) or diffuse sources (such as irrigation to land of treated wastewater/sewage effluent), and describe the receiving environment (such as land or surface waters).

Provide a risk assessment of the potential impacts on waters, in the near-field or far-field, resulting from controlled or uncontrolled discharges from the site. Address the following matters with regard to every potential discharge of contaminated water:

[48] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

- Describe the circumstances in which controlled and uncontrolled discharges might occur.
- Provide stream flow data and information on discharge water quality, including any potential variation in discharge water quality that will be used in combination with proposed discharge rates to estimate in-stream dilution and water quality. Chemical and physical properties of any waste water, including concentrations of constituents, at the point of entering natural surface waters should be discussed along with toxicity of effluent constituents to human health, flora and fauna.
- Provide an assessment of the available assimilative capacity of the receiving waters given existing water quality and other potential point source discharges in the catchment. Options for controlled discharge at times of natural stream flow should be investigated to ensure that adequate flushing of waste water is achieved.
- Provide water quality limits that are appropriate to maintain background water quality and protect other water uses.
- Describe the necessary streamflow conditions in receiving waters under which controlled discharges will be allowed.

Provide relevant information on existing and proposed sewage infrastructure relevant to environmentally relevant activity (ERA) 63, by referring to relevant department policies and guidelines[49], depending on the proposed sewage collection and treatment infrastructure proposed the reuse and/or disposal of treated wastewater and sewage wastes generated.

Identify beneficial use options under the *Waste Reduction and Recycling Act 2011* as per the relevant guidelines for irrigation[50], drilling mud[51], and associated water [52]. The uses might include aquaculture, coal washing, dust suppression, construction, landscaping and revegetation, industrial and manufacturing operations, research and development and domestic, stock, stock intensive and incidental land management. Additional beneficial use guidelines are available on the department's website[53].

9.10 Hazards and safety

Environmental objective and outcomes
The construction and operation of the proposed project should ensure: • the risk of, and the adverse impacts from, natural and man-made hazards are avoided, minimised or mitigated to protect people and property • the community's resilience to natural hazards is maintained or enhanced • the storage and handling of hazardous materials are appropriately located, designed and constructed to minimise health and safety risks to communities and individuals and adverse effects on the environment. • that any risk associated with explosives use, transportation, storage or manufacture is within an acceptable level, in accordance with the *Explosives Act 1999* and codes and standards including the Australian Standard AS2187 Explosives Storage, transport and use • the proposed project prevents or minimises the production of hazardous contaminants and waste • if the production of hazardous contaminants and waste is unavoidable, the proposed project treats and/or contains hazardous contaminants until their disposal at an approved facility.

Impact assessment

Describe the potential risks to people and property that may be associated with the proposed project in the form of a risk assessment for all components of the proposed project and in accordance with relevant standards. The assessment should address the following matters:

[49] E.g. https://environment.des.qld.gov.au/licences-permits/guidelines.html

[50] https://environment.des.qld.gov.au/assets/documents/regulation/wr-ga-irrigation-associated-water.pdf

[51] https://environment.des.qld.gov.au/assets/documents/regulation/wr-ga-drilling-mud.pdf

[52]https://environment.des.qld.gov.au/assets/documents/regulation/wr-ga-associated-water.pdf

[53] https://environment.des.qld.gov.au/waste/end-of-waste-framework.html#end_of_waste_approvals

- potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the proposed project, including estimated probabilities of occurrence
- hazard analysis and risk assessment in accordance with *AS/NZS ISO 31000:2009 Risk management—principles and guidelines* and with *HB203:2006 Environmental risk management principles and processes*
- demonstrate that any major hazard facility involving dangerous and hazardous materials is appropriately located in accordance with *Planning Act 2016*, *State Development Assessment Provisions, Module 13*
- identify all hazardous substances and any explosives to be used, transported, stored, processed or produced and the rate of usage; evaluate the risks associated with the secure storage, use and transportation of explosives to ensure the risks are within an acceptable standard in accordance with *Australian Standard AS2187.1*[54]
- potential wildlife hazards, including a development of a mosquito management plan in accordance with Queensland Health guidelines[55], natural events (e.g. cyclone, storm tide inundation, flooding, bushfire) and implications related to climate change and adaptation
- describe natural hazards that may affect the site with at least a 1% annual exceedance probability (AEP) or 100 year average reoccurrence interval (ARI) level, including mapping of the potential hazard areas at the site
- how siting, layout and operation of the development will avoid or mitigate the risks, particularly with regard to the release of hazardous materials during natural hazard events

Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the proposed project area(s). Identify the residual risk following application of proposed mitigation measures. Present an assessment of the overall acceptability of the impacts of the proposed project in light of the residual uncertainties and risk profile.

Provide an outline of the proposed integrated emergency management planning procedures, including evacuation plans, if required, for the range of situations identified in the risk assessment developed in this section.

Outline any consultation undertaken with the relevant emergency management authorities, including the local disaster management group.

9.11 Cultural heritage

Environmental objective and outcomes
The construction and operation of the proposed project should achieve the purposes of the *Aboriginal Cultural Heritage Act 2003* with respect to the proposed project site, and ensure that the nature and scale of the proposed project does not compromise the cultural heritage significance of a heritage place or heritage area.

Impact assessment

Conduct the impact assessment in accordance with the latest version of the department's *EIS information guideline—Indigenous cultural heritage* and *EIS information guideline—non-Indigenous cultural heritage*[56].

Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* applies, the proponent must develop a Cultural Heritage Management Plan in accordance with the requirements of Part 7 of the *Aboriginal Cultural Heritage Act 2003*.

For non-Indigenous historical heritage, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the proposed project. Any such study should be conducted by an appropriately qualified cultural heritage practitioner. Provide strategies to mitigate and manage any negative impacts of the proposed project on non-Indigenous cultural heritage values and enhance any positive impacts.

[54] *Australian Standard AS 2187*, Explosives-storage transport and use

[55] E.g. Queensland Health – *Guidelines to minimise mosquito and biting midge problems in new developments*, available from http://www.health.qld.gov.au/ph/documents/cdb/14804.pdf

[56] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

9.12 Social

Environmental objective and outcomes
The construction and operation of the proposed project should ensure that: • adverse social impacts arising from the proposed project are avoided or mitigated • benefits for local and regional communities are enhanced.

Impact assessment

Prepare a social impact assessment (SIA) for the proposed project that is consistent with the requirements of the *Strong and Sustainable Resource Communities Act 2017* (SSRC Act) and the Coordinator-General's SIA guideline (March 2018).

The SIA is to be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General, Department of State Development, Manufacturing Infrastructure and Planning. The SIA is to describe the potential social impacts (both positive and negative) of the project.

The SIA is required to include detailed assessment of the following key matters in accordance with the SIA guideline

- community and stakeholder engagement
- workforce management
- housing and accommodation
- local business and industry procurement
- health and community well-being.

The SIA must identify the extent of the workforce proposed to be fly-in, fly-out (FIFO) and provide for an assessment of the impact of the proposed workforce model on the local community, including potential opportunities or opportunity loss.

The information provided in the EIS (including the SIA) will inform the Coordinator-General's decision under Section 12 of the SSRC Act on whether personnel employed during the construction phase of the project will be workers for the purposes of the SSRC Act.

The SIA is to include an analysis of the capacity of towns within 125 km radius of the main access to provide workers for the construction and operational phases of the project and the impacts of a resident workforce on housing and social infrastructure.

9.12.1 Community and stakeholder engagement

The SIA is to be informed by an inclusive and collaborative community and stakeholder engagement process, consistent with the SIA guideline. Community and stakeholder engagement is to be iterative throughout preparation of the SIA and engagement with local government must commence at an early stage.

The SIA is to demonstrate evidence of engagement outcomes from local government, state agencies, local and regional employment and training providers, public and private housing providers, local and regional commerce and community development groups, social and public services providers. The SIA must be informed by the results from community and stakeholder engagement.

9.12.2 Key SIA outcomes

The SIA must include a social impact management plan SIMP with solutions to mitigate the impacts identified in the assessment of the five key matters listed above and enhance social benefits in accordance with the SIA guideline. In particular the SIMP must:

- provide solutions for barriers that may impact choice for people in local and regional communities to engage in project employment opportunities, and for workers to permanently reside in local and regional communities during the construction and operational phases of the project
- provide solutions to accommodate workers to ensure availability and affordability of local and regional housing is not adversely impacted.

The SIMP will describe solutions, a practical basis for the implementation of management measures identified through the SIA process. The SIMP is to include timeframes for implementation of solutions, roles and

responsibilities, stakeholders and potential partnerships. The SIMP must include a process of review throughout the project lifecycle to ensure solutions continue to be effective and ineffective solutions are amended to appropriately mitigate impacts.

The SIA must describe how the recruitment hierarchy for workers in section 9(3A) of the SSRC Act will be implemented.

The SIA will need to include a target for obtaining a local workforce and set the maximum proportion of FIFO workers for the project. This is to be supported by a rationale to ensure local benefit.

The SIA must clearly identify measures for managing any FIFO workforce in accordance with the SIA guideline and with reference to sections 6 and 8 of the SSRC Act and relevant provisions in the *Anti-Discrimination Act 1991*.

9.13 Economic

Environmental objective and outcomes
The construction and operation of the proposed project should ensure that: • avoid or mitigate adverse economic impacts arising from the proposed project • capitalise on opportunities potentially available for capable local industries and communities • create a net economic benefit to the region and state.

Impact assessment

Identify the potential adverse and beneficial economic impacts of the proposed project on the local and regional area and the state. Estimate the costs and benefits and economic impacts of the proposal using both regional impact analysis and cost–benefit analysis. Undertake the analysis in accordance with the Coordinator-General's *Economic impact assessment guideline*[57]. Separately address each major stages of the proposed project (e.g. construction, operation and decommissioning).

Provide an analysis of the economic costs to agricultural activities on land including any impacts to supply chains.

9.14 Transport

Environmental objective and outcomes
The construction and operation of the proposed project should aim to: • maintain the safety and efficiency of all affected transport modes for the proposed project workforce and other transport system users • avoid and mitigate impacts including those on the condition of transport infrastructure • ensure any required works are compatible with existing infrastructure and future transport corridors.

Impact assessment

The EIS should include a clear summary of the total transport task for the proposed project, including workforce, inputs and outputs, during the construction, operational and decommissioning phases of the proposed project. Proponents should make appropriate choices for modes of transport to ensure efficiency and minimise impacts on the community.

Undertake the impact assessment in accordance with the department's *EIS information guideline—Transport*[58]. The methods used should include the following matters:

[57] http://www.coordinatorgeneral.qld.gov.au/resources/guideline/cg/economic-impact-assessment-guideline.pdf

[58] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

- for impacts on roads: a traffic impact assessment report in accordance with the *Guide to traffic impact assessment* (Department of Transport and Main Roads, 2017[59]), with traffic data in DTMR-suitable formats.
- for impacts on rail level crossings: the *Australian Level Crossing Assessment Model* (ALCAM)[60].

Present the transport assessment for each proposed project-affected mode (road, rail, air, port and sea) as appropriate for each phase of the proposed project. Provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by proposed project transport at the local and regional level (e.g. local roads and state-controlled roads).

Discuss how identified impacts will be mitigated for each transport mode. Mitigation strategies may include works, contributions or other strategies that can be documented in a road-use management plan[61]. The strategies should be prepared in close consultation with relevant transport authorities, including local government and the Queensland Police Service. Strategies should consider the transport authorities' works programs and forward planning, and be in accordance with the relevant methodologies, guidelines and design manuals.

9.15 Matters of National Environmental Significant under EPBC Act

Critical matter

The following matters must be considered when preparing the EIS:

- The EIS must state and address the controlling provisions and describe the particular aspects of the environment leading to the controlled action declaration under the EPBC Act.
- The EIS must provide enough information about the proposed project and its relevant impacts to allow the Australian Government's Environment Minister to make an informed decision whether to approve the proposed project under the EPBC Act.
- The assessment of the potential impacts, mitigation measures and any offsets for residual impacts must be dealt with in a stand-alone section of the EIS that fully addresses the matters relevant to the controlling provisions. Proponents should refer to department's *EIS information guideline—Matters of National Environmental Significance*[62] for additional guidance.

Refer to Appendix 3 for the complete TOR for MNES under the EPBC Act requirements.

When water resources for a coal seam gas development or large coal mine are a controlling provision, the proposed project's EIS is referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC). The IESC provides scientific advice to decision makers on potential impacts from CSG and large coal mining developments on Australia's water resources. That typically occurs in time for the IESC's views to be considered by the administering authority when deciding the suitability of the proposed project and developing conditions for any approval.

10 Commitments

The EIS must provide a consolidated description of all the proponent's commitments to implement avoidance, mitigation, management and design measures (including monitoring programs and management plans) that would need to be applied to meet the predicted project outcomes. Should the proposed project proceed, these commitments should be able to be carried over into the approval conditions as relevant.

11 Conditions

Propose conditions that may be placed on the EA and any other required approvals or licenses. For the EA, conditions may be taken directly from the departments existing model conditions and eligibility criteria[63] and/or

[59] https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment

[61] Contact the Department of Transport and Main Road on MDP@tmr.qld.gov.au

[62] https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

[63] https://environment.des.qld.gov.au/land/mining/guidelines.html ; https://environment.des.qld.gov.au/licences-permits/compliance-codes/

modified or developed to suit site and project specific issues.

12 Appendices to the EIS

Appendices to the EIS must include the technical data collected, and evidence used to develop assertions and findings in the main text of the EIS.

No significant issue or matter including statements of uncertainty associated with assertions and findings should be mentioned for the first time in an appendix—it must be addressed in the main text of the EIS.

The EIS must include a table listing the section and sub-sections of the EIS where each requirement of the TOR is addressed.

13 Spatial and electronic data presentation

Maps included in the EIS should have contours at suitable increments relevant to the scale, location, potential impacts and type of proposed project, shown with respect to Australian Height Datum (AHD) and drafted to Geocentric Datum of Australia 1994 (GDA94). In relatively flat locations, contours should be at one metre intervals. Geographical coordinates should be presented as latitude and longitude against the GDA94.

All spatial data presented in the EIS must be made available to the administrating authority in appropriate electronic form, such as shape files.

All water quality data, including waste water quality, referred to in the EIS must be submitted in an appropriate electronic format.

Appendix 1 Glossary

The following acronyms, initialisms and abbreviations have been used in this document.

Acronym/abbreviation	Definition
AEP	annual exceedance probability
AHD	Australian height datum
ALCAM	Australian Level Crossing Assessment Model
ARI	average reoccurrence interval
ARMIS	a road management information system
Bilateral agreement	an agreement between the Australian Government and the State of Queensland under section 45 of the *Environment Protection and Biodiversity Conservation Act 1999* relating to environmental assessment
CHPP	coal handling and preparation plant
CSG	coal seam gas
DAF	Department of Agriculture and Fisheries
DBCT	Dalrymple Bay Coal Terminal
DEE	Commonwealth Department of Environment and Energy
DES	Department of Environment and Science
DILGP	Department of Infrastructure, Local Government and Planning
DTMR	Department of Transport and Main Roads
EA	environmental authority
EHP	The former Department of Environment and Heritage Protection now the Department of Environment and Science
EIS	environmental impact statement
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPP	environmental protection policy (under the EP Act)
EP Regulation	Environmental Protection Regulation 2008
ERA	environmentally relevant activity
FIFO	fly-in-fly-out
GDA94	Geocentric Datum of Australia 1994
IESC	Independent Expert Scientific Committee
MIA	mine infrastructure area
ML	mining lease

Acronym/abbreviation	Definition
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
NGER	National Greenhouse Energy Reporting scheme (Commonwealth)
ROM	run of mine
TOR	Terms of Reference
SIA	Social Impact Assessment
WONS	Weeds of National Significance

Appendix 2 Policies, guidelines and references

The most recent version of the following documents must be considered in the development of the EIS for the Isaac Downs Project.

ANZECC and ARMCANZ, 2000*, Australian and New Zealand guidelines for fresh and marine water quality, Volume 1, The guidelines*, Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand, http://www.agriculture.gov.au/water/quality/guidelines

Australian Level Crossing Assessment Model (ALCAM), http://www.tmr.qld.gov.au/Travel-and-transport/Rail/Level-crossings/ALCAM.aspx

Business and Industry Portal, 2016, *Key resource areas in Queensland*, Queensland Government, Brisbane, https://www.business.qld.gov.au/industry/mining/quarries/key-resource-areas

Business and industry portal, 2017, *Mining and resources*, Queensland Government, Brisbane, https://www.business.qld.gov.au/industry/mining

Commonwealth of Australia, 2008, *National framework and guidance for describing the ecological character of Australian Ramsar wetlands*, Australian Government, Canberra, http://www.environment.gov.au/system/files/resources/6d7408dc-2519-4294-9820-f7b2284816dd/files/module-2-framework.pdf

Commonwealth of Australia 2016, Publications: About the IESC and its advice and fact sheets, e.g. *Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals*, Australian Government, Canberra, www.environment.gov.au/coal-seam-gas-mining/publications.html

Commonwealth of Australia, 2017, EPBC Act publications and resources, e.g. *Matters of National Environmental Significance – Significant impact guidelines, Environment Protection and Biodiversity Conservation Act 1999*, Australian Government, Canberra, http://www.environment.gov.au/epbc/publications

Department of Agriculture, Fisheries and Forestry, 2014, *DAFF Environmental Impact Assessment Companion Guide*, Queensland Government, Brisbane, https://www.daf.qld.gov.au/environment/environmental-impact-assessment-companion-guide

Department of Agriculture and Fisheries, 2017, *Accepted development requirements*, e.g. *Accepted development requirements for operational work that is constructing or raising waterway barrier works*, Queensland Government, Brisbane, https://www.daf.qld.gov.au/fisheries/habitats/fisheries-development/accepted-development.

Department of Environment and Heritage Protection, 2013, *Model water conditions for coal mines in the Fitzroy basin*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/rs-gl-water-conditions-mines-fitzroy.pdf

Department of Environment and Resource Management, 2013, *Queensland Water Quality Guidelines 2009,* Queensland Government, Brisbane, https://environment.des.qld.gov.au/water/pdf/water-quality-guidelines.pdf

Department of Environment and Heritage Protection, 2013, *Noise measurement manual*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/licences-permits/pdf/noise-measurement-manual-em1107.pdf

Department of Environment and Heritage Protection, 2014, *Rehabilitation requirements for mining resource activities*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/rs-gl-rehabilitation-requirements-mining.pdf

Department of Environment and Heritage Protection, 2014, *Queensland environmental offsets policy: Significant residual impact guideline*, *Nature Conservation Act 1992*, *Environmental Protection Act 1994*, *Marine Parks Act 2004*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/significant-residual-impact-guide.pdf

Department of Environment and Heritage Protection, 2015, *The environmental impact statement process for resource projects under the Environmental Protection Act 1994*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/documents/eis-process-guideline-em1375.pdf

Department of Environment and Heritage Protection, 2016, *Model mining conditions*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/rs-gl-model-mining-conditions.pdf

Department of Environment and Heritage Protection, 2016, *Noise and vibration from blasting guideline*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/ts-gl-blasting-noise-and-vibration.pdf

Department of Environment and Heritage Protection, 2016, *Guideline – Structures which are dams or levees constructed as part of environmentally relevant activities*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-structures-dams-levees-eras.pdf

Department of Environment and Heritage Protection 2016, *Manual for assessing consequence categories and hydraulic performance of structures*, March 2016, Queensland Government, Brisbane, https://environment.des.qld.gov.au/assets/documents/regulation/era-mn-assessing-consequence-hydraulic-performance.pdf; https://environment.des.qld.gov.au/land/mining/guidelines.html

Department of Environment and Heritage Protection, 2017*, Information guideline for an environmental impact statement*, Queensland Government, Brisbane, https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

Department of Environment and Heritage Protection, 2017, Links guidelines and manuals in regards to resource activities and/or the EIS process, Queensland Government, Brisbane, e.g.: https://environment.des.qld.gov.au/land/mining/guidelines.html; https://environment.des.qld.gov.au/licences-permits/guidelines.html http://www.ehp.qld.gov.au/management/impact-assessment/environmental_impact_assessment_guidelines.html https://environment.des.qld.gov.au/land/mining/guidelines.html

Department of Environment and Heritage Protection, 2017*, Information to be provided to support an environmental authority application* (e.g. air, noise, land, waste, water), Queensland Government, Brisbane, https://environment.des.qld.gov.au/licences-permits/guidelines.html

Department of Environment and Heritage Protection, 2017, *Water quality guidelines;* and *Water monitoring and sampling manual,* Queensland Government, Brisbane, https://environment.des.qld.gov.au/water/guidelines/, and https://environment.des.qld.gov.au/water/monitoring/sampling-manual/

Department of Environment and Science, 2018, *Background information on sampling bores and stygofauna*, *Environmental Protection (Water Policy 2009 – Monitoring and sampling manual,* https://environment.des.qld.gov.au/water/monitoring/sampling-manual/pdf/biological-assessment-background-information-on-sampling-bores-for-stygofauna.pdf

Department of Infrastructure, Local Government and Planning, 2017, *The Regional Planning Interests Act and statutory regional plans*, Queensland Government, Brisbane http://www.dilgp.qld.gov.au/planning/regional-planning/regional-planning-interests-act.html http://www.dilgp.qld.gov.au/planning/regional-planning/rpi-act-forms-guidelines-and-fact-sheets.html

Department of Infrastructure, Local Government and Planning, July 2017, *RPI Act Statutory Guideline 11/16 Companion Guide. A guide for state agencies and proponents on the requirements of the Regional Planning Interests Act 2014 in the planning and development process*, Queensland Government, Brisbane, https://www.dilgp.qld.gov.au/resources/guideline/rpi-guideline-11-16-dilgp-companion-guide.pdf

Department of Infrastructure, Local Government and Planning, 2017, *State Planning Policy Interactive Mapping System*, Queensland Government, Brisbane, http://www.dilgp.qld.gov.au/planning/state-planning-instruments/spp-interactive-mapping-system.html

Department of State Development, Infrastructure and Planning, 2014, *Significant residual impact guidelines: For matters of state environmental significance and prescribed activities assessable under the* Sustainable Planning Act 2009, Queensland Government, Brisbane, https://www.dilgp.qld.gov.au/resources/guideline/planning/dsdip-significant-residual-impact-guideline.pdf

Department of Transport and Main Roads, 2017, *Guide to traffic impact assessment,* Queensland Government, Brisbane, https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment

Department of National Parks, Recreation, Sport and Racing, 2014, *Code of practice for native forest timber production on the QPWS forest estate*, Operational Support, Queensland Parks and Wildlife Service, Queensland Government, Brisbane https://parks.des.qld.gov.au/managing/pdf/timber-production-qpws-estate.pdf

Department of Natural Resources and Mines, 2016, *Queensland stock route network management strategy, 2014–19*, Queensland Government, Brisbane, https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0010/99622/stock-route-management-strategy.pdf

Department of Science, Information Technology, Innovation and the Arts, December 2016, *Terrestrial vertebrate fauna survey guidelines*, Queensland Government, Brisbane, https://www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey

Department of Science, Information Technology, Innovation and the Arts, December 2016, *Guideline for the environmental assessment of subterranean aquatic fauna*, Queensland Government, Brisbane, https://publications.qld.gov.au/dataset/subterranean-aquatic-fauna

Department of Science, Information Technology, Innovation and the Arts, March 2017, *Groundwater quality assessment guideline: Using monitoring data to assess groundwater quality and potential environmental impacts,* Queensland Government, Brisbane, https://publications.qld.gov.au/en/dataset/groundwater-quality-assessment-guideline/resource/472cc88a-000a-4bb8-a60d-204cfe7e0238

The Department of State Development, April 2017, *Economic impact assessment guideline*, Queensland Government, Brisbane, http://www.coordinatorgeneral.qld.gov.au/resources/guideline/cg/economic-impact-assessment-guideline.pdf

Department of State Development, Infrastructure and Planning, January 2015, *State planning policy—state interest guideline, Mining and extractive resources*, Queensland Government, Brisbane, http://www.statedevelopment.qld.gov.au/resources/guideline/spp/spp-guideline-mining-extractive-resources.pdf

Department of State Development, Infrastructure and Planning, July 2017, *State planning policy*, Queensland Government, Brisbane, http://www.dilgp.qld.gov.au/planning/state-planning-instruments/state-planning-policy.html

Department of State Development and Planning, 2017, *State development assessment provisions (SDAP)*, Queensland Government, Brisbane, http://www.dilgp.qld.gov.au/planning/development-assessment/state-development-assessment-provisions.html

Department of Sustainability, Environment, Water, Populations and Communities, October 2012*, Environment Protection and Biodiversity Conservation Act 1999 Environmental offsets policy*, Australian Government, Canberra, http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy

Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC), January 2015, *Information guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals*, Commonwealth of Australia, http://www.iesc.environment.gov.au/publications

Queensland Government, 2017, *Environmental offsets and environmental offsets framework*, Queensland Government, Brisbane, http://www.qld.gov.au/environment/pollution/management/offsets/

Queensland Government, 2017, *Obtaining approval to clear native vegetation*, Queensland Government, Brisbane, https://www.qld.gov.au/environment/land/vegetation/clearing/

Queensland Government, 2017, *Community involvement in mining and petroleum lease approvals*, Queensland Government, Brisbane, https://www.qld.gov.au/environment/pollution/management/impacts-approvals

Queensland Health, March 2002, *Guidelines to minimise mosquito and biting midge problems in new development areas, Diseases Control, Services*, Communicable Diseases Unit, Queensland Health, Queensland Government, Brisbane, https://www.health.qld.gov.au/ph/documents/cdb/14804.pdf

Queensland Resources Council, 2013, *Queensland resources and energy sector code of practice for local content*, Queensland Resources Council, Brisbane, http://17.0918dp.bne3-0918dp.server-web.com/01_cms/details.asp?ID=3209

The Coordinator-General, 2016, Coordinated projects fact sheets and guidelines, Department of State Development, Infrastructure and Planning, Queensland Government, Brisbane, www.dsdip.qld.gov.au/fact-sheets-and-guidelines/coordinated-projects.html

The Coordinator-General, July 2013, *Social impact assessment guideline*, Department of State Development, Infrastructure and Planning, Queensland Government, Brisbane, http://www.dsdip.qld.gov.au/resources/guideline/social-impact-assessment-guideline.pdf

Appendix 3 Terms of reference for matters of national environmental significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* requirements[64]

The proposed project was referred on 06 March 2019 to the Australian Government Department of the Environment and Energy (DoEE) 2019/8413). On 14 May 2019, DoEE determined the proposed project to be a controlled action under the Commonwealth EPBC Act.

The controlling provisions are *sections*:

- *18 and 18A (listed threatened species and communities), and*
- *24D and 24E (a water resource, in relation to coal seam gas development and large coal mining development)*

The proposed project will be assessed under the bilateral agreement between the Commonwealth and the State of Queensland (section 45 of the EPBC Act) using the EIS prepared under the EP Act. The TOR should be addressed by the proponent in a stand-alone section that primarily focuses on the MNES listed above. This section (henceforth called the 'MNES section') should contain sufficient information to be read alone with reference to technical data or supplementary reports where appropriate. Any detailed technical information to support the text in the MNES section should be included as appendices to the draft EIS.

General Content

The MNES section should take into consideration the EPBC Act Significant Impact Guidelines that can be downloaded from the following web site: http://www.environment.gov.au/epbc/guidelines-policies.html.

If it is necessary to make use of material that is considered to be of a confidential nature, the proponent should consult with DoEE on the preferred presentation of that material, before submitting it to the Minister for approval for publication.

The proponent should ensure that the MNES section assesses compliance of the action with principles of Ecological Sustainable Development as set out in the EPBC Act, and the objects of the Act at Attachment 1. A copy of Schedule 4 of the EPBC Regulations, Matters to be addressed by draft public environment report and environmental impact statement, is at Attachment 2.

Format

The MNES section should be written so that any conclusions reached can be independently assessed. To this end all sources must be appropriately referenced using the Harvard standard. The reference list should include the address of any Internet "web" pages used as data sources.

Maps, diagrams and other illustrative material should be included in the MNES section. The MNES section should be produced on A4 size paper capable of being photocopied, with maps and diagrams on A4 or A3 size and in colour where possible.

The proponent should consider the format and style of the document appropriate for publication on the Internet. The capacity of the website to store data and display the material may have some bearing on how the document is constructed.

Specific Content for the MNES Section

1 **General Information**

Provide the background and context of the action including:

(a) the title of the action;

(b) the full name and postal address of the designated proponent;

(c) a clear outline of the objective of the action;

(d) the location of the action;

[64] provided by the Commonwealth Department of the Environment and Energy

(e) the background to the development of the action;

(f) how the action relates to any other actions (of which the Proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;

(g) the current status of the action; and

(h) the consequences of not proceeding with the action.

2 Description of the Action

All construction, operational and (if relevant) decommissioning components of the action must be described in detail. This should include the precise location of all works to be undertaken, structures to be built or elements of the action that may have impacts on MNES.

The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.

3 Feasible Alternatives

Any feasible alternatives to the action to the extent reasonably practicable, including:

(a) if relevant, the alternative of taking no action;

(b) a comparative description of the impacts of each alternative on the MNES protected by controlling provisions of Part 3 of the EPBC Act for the action; and

(c) sufficient detail to make clear why any alternative is preferred to another.

Short, medium and long-term advantages and disadvantages of the options should be discussed.

4 Description of the Environment

A description of the environment of the proposal site and the surrounding areas that may be affected by the action. It is recommended that this include the following information:

(a) Listed threatened species and ecological communities that are likely to be present in the vicinity of the site, including details of the scope, timing (survey season/s) and methodology for studies or surveys used to provide information on the listed species/community/habitat at the site (and in areas that may be impacted by the project).

(b) A description of the surface and groundwater resources which may be impacted by the action.

5 Habitat Assessment – Listed threatened species and communities

The MNES section must:

(a) describe the relevant listed threatened species and ecological communities (including EPBC Act listing status, distribution, life history and specific habitat requirements (e.g. breeding, foraging, dispersal, etc);

(b) provide details of the scope, methodology, timing and effort of surveys (which must be undertaken by relevant qualified species experts) for the proposed action (including areas outside of each proposed action area which may be impacted by each proposed action); and include details of:

(i) the application of best practice survey guidelines

(ii) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements;

(c) describe and assess the impacts to listed threatened species and ecological communities identified below and any others that are found to be or may potentially be present in areas that may be impacted by each proposed action in accordance with the Matters of National Environmental Significance, Significant impact guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999;

(d) identify which component and phase of the proposed action is of relevance to each listed threatened species or ecological community or if the threat of impact relates to consequential actions; and

(e) where relevant, have regard to any approved conservation advice.

Where relevant, the MNES section must demonstrate that each proposed action will not be inconsistent with Australia's obligations under:

(a) The United Nations Convention on Biological Diversity;

(b) Convention on Conservation of Nature in the South Pacific (Apia Convention);

(c) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and

(d) A recovery plan or threat abatement plan

The MNES section must address impacts on the following listed threatened species and ecological community for the proposed action:

- Koala (*Phascolarctos cinereus*) (combined populations of Queensland, NSW and the ACT) – Vulnerable
- Greater Glider (*Petauroides volans*) – Vulnerable
- Squatter Pigeon (Southern) (*Geophaps scripta scripta*) – Vulnerable
- Ornamental Snake (*Denisonia maculata*) – Vulnerable
- Australian Painted Snipe (*Rostratula australis*) – Endangered
- Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community (Brigalow TEC) – Endangered

To enable the Department to undertake an assessment of the nature and scale of the likely impacts of the proposed action on the listed threatened species and community above, provide a detailed habitat assessment adjacent to the project site.

The habitat assessments for the above listed threatened species must be informed by desktop analysis and surveys, with consideration of relevant Departmental documents (e.g. approved Conservation Advices, Recovery Plans, draft referral guidelines and Listing Advices), the Species Profile and Threats (SPRAT) Database and published research.

The MNES section must provide known historical records of the above listed threatened species in the local region where the species are not identified in the Project area or are considered likely to occur in the Project area. All relevant records must include, if available, the source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.

Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) – Vulnerable

The habitat assessment for the Koala must include, at a minimum:

- discussion of the vegetation composition and structure (i.e. known food trees);
- discussion of habitat use requirements (e.g. foraging, dispersal, shelter, etc.); and
- total area (in hectares) and quality of suitable habitat.

Greater Glider (*Petauroides volans*) – Vulnerable

The habitat assessment for the Greater Glider must include, at a minimum:

- discussion of the vegetation composition and structure (i.e. tree species with the potential to contain hollows);
- discussion of habitat use requirements (i.e. denning/foraging); and
- total area (in hectares) and quality of suitable habitat.

Squatter Pigeon (Southern) (*Geophaps scripta scripta*) – Vulnerable

The habitat assessment for the Squatter Pigeon (Southern) must include, at a minimum:

- discussion of the vegetation composition and structure (i.e. specific tree and grass species);
- identification of suitable land zones to support breeding and foraging habitat;
- identification of permanent or seasonal water bodies or watercourses within one (1) kilometre of the disturbance footprint to support breeding habitat;
- identification of permanent or seasonal water bodies or watercourses within three (3) kilometres of the disturbance footprint to support foraging habitat;
- discussion of habitat use requirements (e.g. breeding, foraging and dispersal); and
- total area (in hectares) and quality of suitable habitat, including disturbed (non-remnant vegetation) areas.

Ornamental Snake (*Denisonia maculata*) – Vulnerable

The habitat assessment for the Ornamental Snake must include, at a minimum:

- discussion of the vegetation composition and structure on relevant land zones (i.e. riparian vegetation, gilgai mounds and depressions, Brigalow TEC, cracking clay soils and microhabitat features);
- details and locations (including a map) of known food sources (i.e. frog species);
- discussion of habitat use requirements (e.g. shelter/refuge, foraging, dispersal, etc.), including consideration of known important habitat and suitable habitats; and
- total area (in hectares) and quality of suitable habitat.

Australian Painted Snipe (*Rostratula australis*) – Endangered

The habitat assessment for the Australian Painted Snipe must include, at a minimum:

- discussion of the vegetation composition and structure;
- discussion of habitat use requirements (e.g. breeding and foraging habitat etc.); and
- total area (in hectares) and quality of suitable habitat.

Brigalow (*Acacia harpophylla* dominant and co-dominant) threatened ecological community – Endangered

The habitat assessment for Brigalow TEC must include, at a minimum:

- assessment (in a cross-reference table) of the vegetation composition against the key diagnostic characteristics and condition thresholds for Brigalow TEC; and
- total area (in hectares) and quality of suitable Brigalow TEC.

The MNES section must also include a detailed habitat assessment for any other listed threatened species and communities identified during ecological surveys.

Detailed mapping of suitable habitat for all listed threatened species and communities that are found to be, or may potentially be, present, must be included in the MNES section, and must:

- be specific to the habitat assessment undertaken for each listed threatened species and ecological community (i.e. not illustrate relevant Queensland Regional Ecosystems only);
- include an overlay of the project disturbance footprint;
- include known records of individuals derived from desktop analysis and/or field surveys; and
- be provided separately as attachments in JPEG format.

6 A water resource, in relation to coal seam gas development and large coal mining development

The National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development, to which Queensland is a signatory, specifies that all coal seam gas and large coal mining proposals that are likely to have a significant impact on water resources are to be referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) for advice.

In relation to the proposed mine, the EIS must provide details on the current state of groundwater and surface water in the region as well as any use of these resources.

The EIS must describe and assess the impacts to water resources giving consideration to the Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources.

The EIS must address the information requirements contained in the Information Guidelines for the Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals and provide a cross-reference table to identify where each component of the guidelines has been addressed.

7 Relevant Impacts

The impacts must be assessed in accordance with relevant Department policies and guidelines, and information provided in the SPRAT Database.

(a) The MNES section must include a description of all of the relevant impacts of the action. Relevant impacts are impacts that the action will have or is likely to have on a matter protected by a controlling provision. Impacts during both the construction, operational and (if relevant) the decommissioning phases of the project should be addressed, and the following information provided:

- a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts;
- a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
- analysis of the significance of the relevant impacts; and
- any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

(b) The MNES section should identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity).

The MNES section should also address the potential cumulative impact of the proposal on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience. Where relevant to the potential impact, a risk assessment should be conducted and documented.

(c) The MNES section should also provide a detailed assessment of any likely impact that this proposed action may facilitate on the following (at the local, regional, state, national and international scale):

- Listed threatened species and ecological communities;
- A water resource, in relation to coal seam gas development and large coal mining development.

For Brigalow TEC, the total direct impact (in hectares) to each identified patch must be provided in the MNES section compared to its current extent. Further, the impact assessment for Brigalow TEC must include a discussion on the post-impact viability of the Brigalow TEC patches in the project site to be directly impacted from fragmentation as a result of vegetation clearance.

8 Avoidance, Safeguards and Mitigation Measures

The MNES section must include detailed descriptions of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action on MNES. The proposed measures should be based on best available practices, appropriate standards and supported by scientific evidence. The MNES section must include:

- proposed measures to be undertaken to avoid and mitigate the relevant impacts of the proposed action on MNES, including those required by other Commonwealth, State and local government approvals;
- an assessment of the predicted effectiveness of the proposed measures;
- any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advices, and a discussion on whether the proposed measures are not inconsistent with relevant recovery plans and threat abatement plans;
- details of ongoing management, including monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures;
- details on measures, if any, proposed to be undertaken by State and local government, including the name of the agency responsible for approving each measure; and
- information on the timing, frequency and duration of the measures to be implemented.
- an outline of an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing.
- The MNES section needs to address the project phases (construction, operation, decommission) separately. It must state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each relevant MNES environmental issue.
- The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.

The SPRAT Database may provide some relevant mitigation measures for each listed threatened species and the

ecological community. All proposed measures for MNES should consider the 'S.M.A.R.T' principle:

- S – Specific (what and how)
- M – Measurable (baseline information, number/value, auditable)
- A – Achievable (timeframe, money, personnel)
- R – Relevant (conservation advices, recovery plans, threat abatement plans)
- T – Time-bound (specific timeframe to complete)

9 Environmental Offsets

The MNES section must include an assessment of the likelihood of residual significant impacts occurring on listed threatened species and communities, and water resources after avoidance, mitigation and management measures relating to the proposed action have been applied. If it is determined that a residual significant impact is likely, include a draft Offset Management Strategy that provides, at a minimum:

- details of the environmental offset/s (in hectares) for residual significant impacts of the proposed action on relevant MNES, and/or their habitat;
- details of how the environmental offset/s meets the requirements of the Department's EPBC Act Environmental Offsets Policy (2012) (EPBC Act Offset Policy), including the Offsets Assessments Guide, available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy;
- details of a strategy for the staging of environmental offset/s for each project stage (if proposed);
- details of appropriate offset area/s (including a map) to compensate for the residual significant impact on relevant MNES, and/or their habitat;
- information about how the proposed offset/s area provides connectivity with other relevant habitats and biodiversity corridors; and
- details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the offset area/s against development incompatible with conservation.

If available, include a draft Offsets Management Plan which also provides (where possible):

- a field validation survey and baseline description of the current condition (prior to any management activities) of the offset area/s, including existing vegetation, for relevant MNES, and/or their habitat;
- a description and map (including shapefiles) to clearly define the location and boundaries of the proposed offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares);
- a description of the management measures (including timing, frequency and duration) that will be implemented in the offset area/s;
- a discussion of how proposed management measures take into account relevant approved conservation advices and are consistent with the measures contained in relevant recovery plans and threat abatement plans;
- completion criteria and performance targets for evaluating the effectiveness of the Offset Management Plan implementation, and criteria for triggering corrective actions;
- a program to monitor, report on and review the effectiveness of the Offset Management Plan;
- a description of potential risks to the successful implementation of the environmental offset/s, and contingency measures that would be implemented to mitigate against these risks; and
- details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the offset area/s against development incompatible with conservation.

The draft Offset Management Plan must be prepared by a suitably qualified person and in accordance with the Department's Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.

10 Other Approvals and Conditions

The MNES section must include information on any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. This must include:

(a) details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that deals with the proposed action, including:

- what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and
- how the scheme provides for the prevention, minimisation and management of any relevant impacts;

(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;

(c) a statement identifying any additional approval that is required; and

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

11 Consultation

Any consultation about the action, including:

(a) any consultation that has already taken place;

(b) proposed consultation about relevant impacts of the action;

(c) if there has been consultation about the proposed action, any documented response to, or result of, the consultation; and

(d) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

12 Environmental Record of Person(S) Proposing to take the Action

The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action; and

(b) for an action for which a person has applied for a permit, the person making the application.

If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.

13 Economic and Social Matters

The economic and social impacts of the action, both positive and negative, must be analysed. Matters of interest may include:

- details of any public consultation activities undertaken, and their outcomes;
- projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies;
- employment opportunities expected to be generated by the project (including construction and operational phases).

Economic and social impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the proposed action, as identified in section 3 above, should also be included.

14 Information Sources Provided in the MNES Section

For information given in the MNES section, the MNES section must state:

(a) the source of the information;

(b) how recent the information is;

(c) how the reliability of the information was tested; and

(d) what uncertainties (if any) are in the information.

15 Conclusion

An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion on compliance with principles of ESD and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

Measures proposed or required by way of offset for any unavoidable impacts on MNES, and the relative degree of compensation, should be restated here.

Attachment 1 - The objects and principles of the EPBC Act sections 3 and 3a

3 Objects of the Act

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;

(c) to promote the conservation of biodiversity;

(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples;

(e) to assist in the co-operative implementation of Australia's international environmental responsibilities;

(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and

(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

3A Principles of Ecologically Sustainable Development

The following principles are principles of ecologically sustainable development.

(a) Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

(b) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(c) The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

(d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

(e) Improved valuation, pricing and incentive mechanisms should be promoted.

Attachment 2 - Matters that must be addressed in a public environment report (PER) or EIS (Schedule 4 of the EPBC Regulations 2000)

1 General information

1.01 The background of the action including:

(a) the title of the action;

(b) the full name and postal address of the designated Proponent;

(c) a clear outline of the objective of the action;

(d) the location of the action;

(e) the background to the development of the action;

(f) how the action relates to any other actions (of which the Proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;

(g) the current status of the action; and

(h) the consequences of not proceeding with the action.

2 Description

2.01 A description of the action, including:

(a) all the components of the action;

(b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;

(c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;

(d) relevant impacts of the action;

(e) proposed safeguards and mitigation measures to deal with relevant impacts of the action;

(f) any other requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply, to the proposed action;

(g) to the extent reasonably practicable, any feasible alternatives to the action, including:

(i) if relevant, the alternative of taking no action;

(ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action; and

(iii) sufficient detail to make clear why any alternative is preferred to another;

(h) any consultation about the action, including:

(i) any consultation that has already taken place;

(ii) proposed consultation about relevant impacts of the action; and

(iii) if there has been consultation about the proposed action — any documented response to, or result of, the consultation; and

(i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

3 Relevant impacts

3.01 Information given under paragraph 2.01(d) must include

(a) a description of the relevant impacts of the action;

(b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;

(c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;

(d) analysis of the significance of the relevant impacts; and

(e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

4 Proposed safeguards and mitigation measures

4.01 Information given under paragraph 2.01(e) must include:

(a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;

(b) any statutory or policy basis for the mitigation measures;

(c) the cost of the mitigation measures;

(d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;

(e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program; and

(f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the Proponent.

5 Other Approvals and Conditions

5.01 Information given under paragraph 2.01(f) must include:

(a) details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:

(i) what environmental assessment of the proposed action has been, or is being carried out under the scheme, plan or policy; and

(ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts;

(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;

(c) a statement identifying any additional approval that is required; and

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6 Environmental record of person proposing to take the action

6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action; and

(b) for an action for which a person has applied for a permit, the person making the application.

6.02 If the person proposing to take the action is a corporation — details of the corporation's environmental policy and planning framework.

7 Information sources

7.01 For information given the PER/EIS must state:

(a) the source of the information; and

(b) how recent the information is; and

(c) how the reliability of the information was tested; and

(d) what uncertainties (if any) are in the information.