

Saraji East Mining Lease Project

INITIAL ADVICE STATEMENT

- 10 February 2017
- Final

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Abbreviations and acronyms

The following abbreviations and acronyms have been used in this document:

| | |
|-------------|--|
| AEP | Annual Exceedance Probability |
| BMA | BM Alliance Coal Operations Pty Ltd |
| BMC | BHP Billiton Mitsui Coal Pty Ltd |
| CHMP | Cultural Heritage Management Plan |
| CHPP | Coal Handling and Preparation Plant |
| CQCA | Central Queensland Coal Associates |
| CQCP | Central Queensland Gas Pipeline |
| DAF | Department of Agriculture and Fisheries |
| DATSIP | Department of Aboriginal and Torres Strait Islander Partnerships |
| DEE | Department of the Environment and Energy |
| DERM | Department of Environment and Resources Management |
| DILGP | Department of Infrastructure, Local Government and Planning |
| DNRM | Department of Natural Resources and Mines |
| DTMR | Department of Transport and Main Roads |
| EA | Environmental Authority |
| ECR | Environmental Commitments Register |
| EHP | Department of Environment and Heritage Protection |
| EIS | Environmental Impact Statement |
| EP Act | <i>Environmental Protection Act 1994</i> |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| EPC | Exploration Permit for Coal |
| ERA | Environmentally Relevant Activity |
| EWPC | Eungella Water Pipeline Company |
| IAS | Initial Advice Statement |
| IRC | Isaac Regional Council |
| km | Kilometres |
| kV | Kilovolts |
| LGA | Local Government Area |
| m | Metres |
| MIA | Mine Industrial Area |
| ML | Mining Lease (issued pursuant to the <i>Mineral Resources Act 1989</i>) |
| ML/year | mega litres per year |
| MLA | Mining Lease Application (issued pursuant to the <i>Mineral Resources Act 1989</i>) |
| MNES | Matters of National Environmental Significance |
| MR Act | <i>Mineral Resources Act 1989</i> |
| Mtpa | Million tonnes per annum |
| NC Act | <i>Nature Conservation Act 1992</i> |
| QR | Queensland Rail |
| RE | Regional Ecosystem |
| RIDA | regional interests development approval |
| ROM | run-of-mine |
| RPI Act | <i>Regional Planning Interests Act 2014</i> |
| Saraji Mine | Saraji Open-Cut Coal Mine |

| | |
|---------------|--|
| SCA | Strategic Cropping Area |
| SCL | Strategic Cropping Land |
| SECP | Stakeholder Engagement and Communications Plan |
| SP Act | <i>Sustainable Planning Act 2009</i> |
| TECs | Threatened Ecological Communities |
| the Project | Saraji East Mining Lease Project |
| the Proponent | BM Alliance Coal Operations Pty Ltd |
| TIA | Traffic Impact Assessment |
| TOR | Terms of Reference |

Executive summary

BM Alliance Coal Operations Pty Ltd (BMA) proposes to recommence the assessment and finalisation of environmental approvals for the Saraji East Mining Lease Project (the Project). The Project includes a greenfield underground single-seam mine operation and associated project infrastructure. The Project involves the extraction of up to seven million tonnes per annum (Mtpa) of metallurgical product coal for the export market over a life of 25 to 30 years.

The Project is located approximately 30 kilometres (km) north of Dysart and approximately 167 km southwest of Mackay in Queensland. The Project is located adjacent to the existing Saraji Open-Cut Coal Mine (Saraji Mine).

The Proponent

BMA (the Proponent) is Australia's largest exporter of metallurgical coal, supplying high quality coking coals, pulverised coal injection coals and thermal coals to domestic and international customers. BMA was formed in 2001 as a partnership between BHP Billiton Limited and Mitsubishi Development Pty Ltd under which the two companies share equal ownership and management of seven Bowen Basin operational coal mines: Blackwater, Broadmeadow, Goonyella Riverside, Peak Downs, Saraji, Caval Ridge and Daunia as well as the Hay Point Coal Export Terminal near Mackay.

Project benefits

The Project is expected to:

- Contribute significantly to the State's economy and will provide employment opportunities. The Project will directly employ up to 1,000 people during the peak constructional phase and approximately 500 people during the peak operations phase. In addition, there will be opportunities for local employment in construction, transport and the supply of goods and services.
- Require significant capital investment to bring it to full production and projected further expenditure for replacement capital over the life of the Project.
- Generate large coal sales and exports over the life of the Project, and associated revenue benefits for the State and Commonwealth through coal royalties and other taxation.
- Increase industrial activity in the region and generate wealth for many sectors of the local and regional economies. The Dysart and surrounding regional communities are likely to benefit significantly due to the economic benefits expected to arise as a result of the Project.
- Provide efficiencies by capitalising on the proximity to existing infrastructure located at BMA's Saraji Mine. This includes:
 - utilising the open-cut spoil dumps to distribute and dispose of dewatered tailings and rejects from the Coal Handling Preparation Plant (CHPP)
 - utilising excess mine water at the Saraji Mine during construction of the Project, and potentially to supplement supply during operation

- utilising the Saraji Mine open-cut pits for mine access and highwall entry to limit the costs, time, disturbance footprint and risks involved in the construction of new mine portals
- utilising the existing rail infrastructure to transport product coal to market
- constructing some above ground infrastructure within previously disturbed areas on the Saraji Mine.

Environmental and social aspects

The key environmental and social aspects of the Project are as follows:

- The Project may impact on threatened ecological communities and species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Department of the Environment and Energy (DEE) has determined that the Project is a “controlled” action under the EPBC Act.
- Changes in topography and land-use due to subsidence.
- Ground preparation activities for mine infrastructure including the CHPP, Mine Infrastructure Area (MIA), transport and infrastructure corridor, rail spur and balloon loop.
- The management of surface water impacts due to subsidence resulting from underground longwall operations.
- The management of groundwater during pre-drainage of incidental mine gas, progressive underground mine dewatering and disturbance to strata around mining areas.
- The need to manage the impact on ecological communities and species listed under nature conservation legislation, which may be disturbed as a result of subsidence and surface infrastructure.
- Stabilising and rehabilitation of disturbed land to a suitable post mine land use.
- Influence on the region’s demographics and population. The Project will increase regional employment directly and indirectly by increasing demand from suppliers.
- Changes to the socio-economic environment with respect to housing, employment, community values and the availability and development of public services.
- The Project will require inter-departmental coordination for permitting and approvals to mitigate the potential for schedule impact resulting from delays during the assessment process. The Project involves Mining Lease (ML) applications and an Environmental Authority (EA) application. The Saraji Mine EA may require amendments to allow some integration between the Projects. An indicative list of approvals for the Project is presented in Table 5-1 of this Initial Advice Statement (IAS).

Purpose of the IAS

This IAS has been prepared by BMA to provide information to:

- Provide the Queensland Department of Environment and Heritage Protection (EHP) with the supporting documentation required for an application for an Environmental Impact Statement (EIS) under Chapter 3 Section 37 of the *Environmental Protection Act 1994* (EP Act). This IAS scopes the potential impacts, (positive and negative) to be investigated in detail in the EIS.

- Provide sufficient detail to enable advisory agencies and other stakeholders to have effective input into establishing a Terms of Reference (TOR) for an EIS for the Project.

Stakeholder engagement

A Stakeholder Engagement and Communications Plan (SECP) will be developed for the Project to proactively work with and respond to stakeholders, to develop appropriate solutions and strategies to minimise negative impacts and enhance benefits associated with the Project. BMA will undertake consultation with stakeholders as part of the EIS process; the stakeholder engagement process will involve:

- planning for and implementing opportunities for stakeholders to comment on the potential impacts of the Project
- obtaining, considering and responding to stakeholder comments and issues of concern
- building on information developed by BMA during the planning process for the Project.

1 Introduction

1.1 The Proponent

BM Alliance Coal Operations Pty Ltd (BMA) acts on behalf of the Central Queensland Coal Associates (CQCA) Joint Venture. The CQCA is an unincorporated joint venture between BHP Billiton (50 percent) and Mitsubishi Development Pty Ltd (50 percent). Joint venture arrangements are managed in accordance with the CQCA Joint Venture Agreement dated 28 June 2001 and a Strategic Alliance Agreement dated 28 June 2001 which created BMA. BMA is Australia's largest exporter of metallurgical coal. BMA has equal ownership and management of seven Central Queensland operational coal mines: Blackwater, Broadmeadow, Goonyella Riverside, Peak Downs, Saraji, Caval Ridge and Daunia and also manages the Hay Point Coal Terminal near Mackay in Queensland. An additional two mines are currently under care and maintenance, namely Norwich Park and Gregory Crinum. These assets are shown on Figure 1-1.

BMA supplies high quality coking coal, pulverised coal injection coals and thermal coals to domestic and international customers.

BMA's operations provide significant benefits to the local communities, the broader Central Queensland region and to the Queensland economy as a whole. BMA is the largest employer in the region with approximately 12,000 full time equivalent employees and contractors and plays a key role in the economic development of Central Queensland.

BMA's contribution to the State's economy is significant. In the 2015 financial year, the total royalties and taxes paid to the Queensland Government by BMA and BHP Billiton Mitsui Coal Pty Ltd (BMC) was \$796 million.

BMA is committed to the communities in which it operates.

BMA is committed to regularly reviewing environmental performance and publicly reporting on progress.

BMA is the registered entity proposing to carry out the Project; however, all permits and licences will be issued to the companies detailed in Table 1-1.

■ Table 1-1 Permits and licences holders

| Name | Registered address |
|--|--|
| BHP Coal Pty Ltd | Level 23, Riparian Plaza 71 Eagle Street BRISBANE CITY QLD 4000 |
| Umal Consolidated Pty Ltd | 'Water Place' Level 20 1 Eagle Street BRISBANE CITY QLD 4000 |
| BHP Queensland Coal Investments Pty Ltd | 'Water Place', Level 20 1 Eagle Street BRISBANE CITY QLD 4000 |
| QCT Investment Pty Ltd T/A QCT Investment Pty Ltd | C/- BMA Gregory Crinum Mine - Michael Gale PO Box 1526 EMERALD QLD 4720 |
| QCT Mining Pty Ltd | 35 Clarence Street SYDNEY NSW 2000 |

| | |
|--------------------------------|---|
| QCT Resources Pty Ltd | Level 36 50 Bridge Street SYDNEY NSW 2000 |
| Mitsubishi Development Pty Ltd | Level 13, Riverside Centre 123 Eagle Street BRISBANE CITY QLD 4000 |

1.2 Project background

On 24 May 2013 BMA applied for a new site specific Environmental Authority (EA) for coal mining with the former Department of Environment and Resource Management (DERM), now Department of Environment and Heritage Protection (EHP). On 25 June 2013, DERM issued a Notice of Information Request for the EA application, requiring an assessment by environmental impact assessment (EIS).

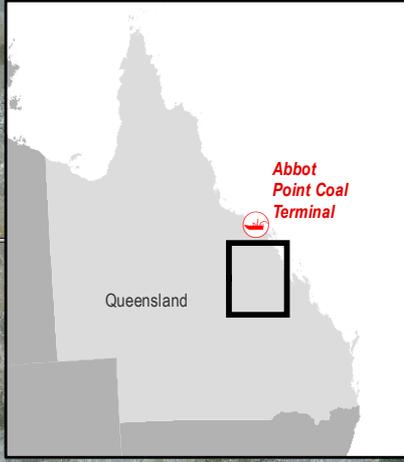
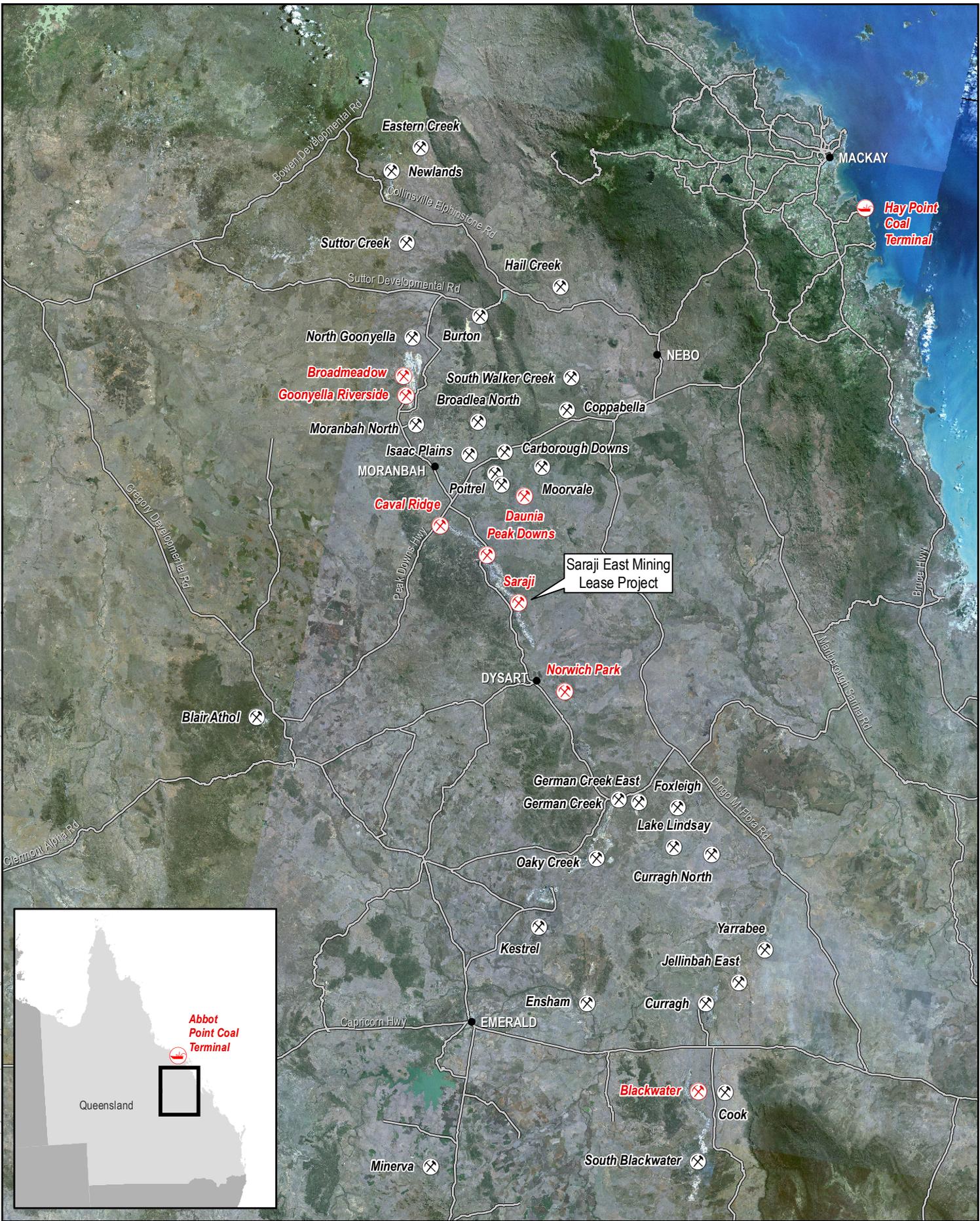
In 2012, BMA decided not to proceed with (a project or plan) and temporarily ceased the progression of the EIS study being undertaken to support the assessment and approval of the Project. BMA proposes to recommence the assessment and finalisation of environmental approvals for the Project. The key components of the Project include an underground mine operation (single-seam) and associated Project infrastructure. The Project involves the extraction of up to seven Mtpa of metallurgical product coal for the export market over a mine life of 25 to 30 years.

The Project is located approximately 30 kilometres (km) north of Dysart and approximately 167 km southwest of Mackay in Queensland. As depicted in Figure 1-1, the Project is located adjacent to the existing Saraji Open-Cut Coal Mine (Saraji Mine). BMA currently operates the Saraji Mine on Mining Lease (ML) 70142, ML 1775, ML 1784, ML 1782, ML 2360, ML 2410, ML 70294, ML 70298 and ML 70328 under the approval of EA Permit No. EPML00862313.

The key objectives of the Project are to:

- utilise BMA-owned land on the Saraji Mine MLs to minimise the environmental impacts from additional infrastructure and to provide project efficiencies
- operate a profitable project to provide high-quality hard coking coal, semi hard coking coal and pulverised injection coal to the export market
- design, construct and operate a project that:
 - minimises adverse impacts on the social environment
 - complies with all relevant statutory obligations and continues to improve processes which enhance sound environmental management.

AECOM does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AECOM shall bear no responsibility or liability for any errors, faults, defects, or omissions in the information.



- LEGEND**
- Locality
 - Major Road
 - 🚢 BMA Coal Terminal
 - ⊗ BMA Mine
 - ⊗ Other Mine

Data sources:
 1. Mine Locations © BMA 2016 © State of Queensland (Department of Natural Resources and Mines) 2016
 2. Roads, Localities © PitneyBowes (Streapro) 2014
 3. Landsat™ Imagery

**Figure 1-1
Regional Context**

Initial Advice Statement
Saraji East Mining Lease Project

0 5 10 20
Kilometres

Scale: 1:1,500,000 (when printed at A4)
 Projection: Map Grid of Australia - Zone 55 (GDA94)

BMA
BHP Billiton Mitsubishi Alliance

DATE: 14/10/2016 VERSION: 0

1.3 Project terminology

For the purpose of the Initial Advice Statement (IAS), the Project site is defined by the area of land within Exploration Permit for Coal (EPC) 837, EPC 2103, Mining Lease Application (MLA) 70383, MLA 70459, ML 1775, ML 70142, ML 1782, ML 70328 and ML 1784.

1.4 Need for the Project

The Project will produce metallurgical coal for export, generate jobs and result in increased investments and royalties for Queensland. Demand for coal products in Asia and other international markets, particularly for steel manufacturing, has created a window of opportunity for the development of this Project.

Coal is Queensland's largest export commodity, with the Queensland Government benefiting significantly from royalties paid by the mining industry each year. The financial year ending 30 June 2015 yielded the Queensland Government a benefit of approximately \$1.6 billion from coal royalties alone (Queensland Treasury, 2015). The Project will add to the royalties derived from mining activities in each year of operation.

In addition to these economic benefits, BMA, through its existing operations, provides considerable employment and training opportunities, through direct and indirect employment and secondary support industries, and extensive support to community development, education, health, social and recreational programs.

The Project's EIS will consider alternatives to the Project. These will include alternative sites, alternative activities and will address the "do nothing option". The EIS will also consider government priorities and objectives as outlined in relevant government policies and strategies.

1.5 Purpose and scope of the IAS

This IAS has been prepared by BMA to provide EHP with relevant information in support of BMA's EA application which has triggered the need for an EIS under Chapter 3 Section 37 of the EP Act.

2 Project description

2.1 Project overview

BMA proposes to develop the Saraji East Mining Lease Project (the Project), a greenfield single-seam underground mine development on MLA 70383 commencing from within ML 1775. A new infrastructure transport and infrastructure corridor will be constructed on MLA 70383. The Project proposal also comprises a Coal Handling Preparation Plant (CHPP), associated Mine Infrastructure Area (MIA) and a new rail spur and balloon loop; which are proposed to be located on the site of the existing adjacent Saraji Mine. The Project is expected to produce up to seven million tonnes per annum (Mtpa) of metallurgical product coal for the export market over a life of 25 to 30 years.

The Project is located within the Isaac Regional Council (IRC) Local Government Area (LGA) approximately 30 km north of Dysart and approximately 167 km south-west of Mackay in Queensland. The Project is located adjacent to the existing Saraji Mine. BMA currently operates the Saraji Mine on ML 1775, ML 70142, ML 1784, ML 1782, ML 2360, ML 2410, ML 70294, ML 70298 and ML 70328 under the approval of EA Permit No. EPML00862313.

The proposed mine development will comprise:

- a greenfield underground coal mine to be developed on MLA 70383 commencing from within the Saraji Mine ML 1775
- production of up to seven Mt/yr of product coal for the export market over the 25 to 30 year life of the Project
- a new accommodation facility, if required, to support the construction and operational stages located on MLA 70383. The accommodation facility may consist of a temporary construction village and a separate permanent operation village
- dewatered tailings and reject disposal within spoil on the Saraji Mine
- a new MIA located on ML 1775
- a new CHPP located on ML 70142
- a conveyor system to deliver coal from the underground portals to the CHPP and product coal to the rail loading facilities located over both ML 1775 and ML 70142
- run-of-mine (ROM) stockpile and product stockpile pads located on ML 70142
- a new rail spur and balloon loop and signalling system located on ML 70142
- a network of gas drainage bores and associated surface infrastructure consisting of gas and water collection networks and access tracks across the underground mine footprint across ML 1775 and MLA 70383

- relocation of the existing Vermont water pipeline and existing 132 kilovolt (kV) powerline into a new infrastructure and transport corridor to the eastern boundary of MLA 70383 and northern boundary of MLA 70459.

An overview of the Project layout is shown in Figure 2-1.

Further to this, Figure 2-1 also identifies two Potential Future Development Areas. These areas do not form part of the scope of the Project, however, BMA are continuing to assess the economic viability of developing these areas and are subject to further business planning. Dates are yet to be determined. The development of these areas will not be discussed further in this IAS.

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| | | | |
|---|---|---|---|
| <p>LEGEND</p> <ul style="list-style-type: none"> Haul Road Public Road Proposed Underground Mine Layout Proposed Rail Loop Proposed Supporting Transport and/or Infrastructure Corridor BMA Tenure / Tenement Proposed Mine and Infrastructure Potential Future Development Area | <p style="text-align: center;">Figure 2-1 Project Layout</p> <p style="text-align: center;">Initial Advice Statement Saraji East Mining Lease Project</p> <div style="text-align: center;"> <p>Scale: 1:100,000 (when printed at A4)</p> </div> <p>Projection: Map Grid of Australia - Zone 55 (GDA94)</p> <p>BMA BHP Billiton Mitsubishi Alliance</p> | <p>LEGEND</p> <ul style="list-style-type: none"> Haul Road Public Road Proposed Underground Mine Layout Proposed Rail Loop Proposed Supporting Transport and/or Infrastructure Corridor BMA Tenure / Tenement Proposed Mine and Infrastructure Potential Future Development Area | <p>LEGEND</p> <ul style="list-style-type: none"> Haul Road Public Road Proposed Underground Mine Layout Proposed Rail Loop Proposed Supporting Transport and/or Infrastructure Corridor BMA Tenure / Tenement Proposed Mine and Infrastructure Potential Future Development Area |
| <p>File name: I:\aube\1p0\031\Projects\605X\60507031\4_Tech\WorkArea\4.99_GIS\02_MXD\02_IAS\60507031_G007_v1_A4P.mxd GISWR-23_45</p> | | | |

2.2 Accommodation and workforce

BMA will own and operate the Project and contract the construction of the CHPP, MIA and associated infrastructure to a suitable construction contractor(s). The Project will employ up to 1000 construction employees and approximately 500 operational employees.

A new accommodation facility may be needed to support the Project's construction and operational stages. The requirement for accommodation villages will be determined by workforce planning, labour market conditions and general market conditions during the pre-project execution development process. This represents the worst case scenario from an impact perspective. If required, the accommodation facility may consist of a temporary construction village and/or a separate permanent operation village. Both villages will be located along the eastern boundary of MLA 70383 as shown in Figure 2-1.

2.3 Land tenure and ownership

Project site is defined by the area of land within EPC 837, EPC 2103, MLA 70383, MLA 70459, ML 1775, ML 70142, ML 1782, ML 70328 and ML 1784. These exploration and mining tenements are held by the CQCA Joint Venture. Operations are managed by BMA on behalf of the CQCA Joint Ventures under a Management Agreement.

Details of the mining tenements are provided in Table 2-1 and presented in Figure 2-2.

■ **Table 2-1 Project mining tenure**

| Mining tenure | Name | Owner | Development associated with the project |
|----------------------|---|--------------------|--|
| MLA 70383 | Saraji East | CQCA Joint Venture | Underground mining, gas drainage and vent shafts, accommodation villages, relocation of the existing 132 kV Powerlink Powerline and Eungella Water Pipeline Company (EWPC) Southern Extension Water Pipeline and access roads. |
| MLA 70459 | Saraji East Extended | CQCA Joint Venture | Relocation of the existing 132 kV Powerlink Powerline and EWPC Southern Extension Water Pipeline. |
| EPC 837 | Saraji East Exploration Permit for Coal | CQCA Joint Venture | Underground mining, gas drainage, accommodation village and infrastructure. |
| EPC 2103 | Saraji East Exploration Permit for Coal | CQCA Joint Venture | Underground mining, gas drainage infrastructure, and water and power relocations. |
| ML 1775 | Saraji – Peak Downs Mine | CQCA Joint Venture | Underground mining, MIA, and access roads, and conveyor. |
| ML 70142 | Boomerang Creek | CQCA Joint Venture | CHPP, product stockpiles, conveyors, rail spur, balloon loop and loading facilities. |

The CQCA Joint Venture currently has numerous granted surface areas ("surface rights") on MLs for the Project's proposed infrastructure areas located on ML 70142 and ML 1775.

The land underlying MLA 70383, MLA 70459 and the associated EPCs is currently used predominately for cattle grazing. The land underlying MLA 70383 and MLA 70459 is freehold land in title with various associated easement encumbrances and is primarily owned by four major land holders including the CQCA Joint Venture.

The following easements and associated infrastructure currently run through parts of the Project's tenements, ML 1775, ML 1782 and MLA 70383:

- Lake Vermont Road
- Powerlink 132 kV lines
- Saraji Mine 66 kV powerlines
- EWPC Southern Extension Water Pipeline
- Lake Vermont Queensland Rail (QR) rail spur
- pipeline license for the Central Queensland Gas Pipeline (CQGP)
- access easements.

Details of the tenure and ownership of land parcels within the Project site are provided in Table 2-2 and presented in Figure 2-2.

▪ **Table 2-2 Tenure and ownership**

| Map ID | Lot and plan | Tenure | Registered owner | Tenement |
|--------|--------------|-------------|---|------------------|
| L15 | 1SP190748 | Freehold | Bowen Basin Coal Pty Ltd | MLA 70383 |
| L9 | 1SP260662 | Freehold | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| L11 | 1SP190749 | Freehold | Bowen Basin Coal Pty Ltd | MLA 70383 |
| L17 | 5SP235303 | Freehold | Private landholder | MLA 70383 |
| L14 | 4SP235303 | Freehold | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| L4 | 9SP235297 | Lands Lease | QCT Mining Pty Ltd QCT Investment Pty Ltd Mitsubishi Development Pty Ltd BHP Queensland Coal Investments Pty Ltd | ML 1775 ML 70142 |

| | | | | |
|---------------|-----------------|--------------------|---|----------------------------------|
| | | | BHP Coal Pty Ltd | |
| L6 | 10CNS93 | Freehold | Private landholder | MLA 70383 |
| L7 | 7CNS144 | Lands Lease | QCT Mining Pty Ltd QCT Investment Pty Ltd Mitsubishi Development Pty Ltd BHP Queensland Coal Investments Pty Ltd BHP Coal Pty Ltd | ML 1775 ML 1782 MLA 70383 |
| L16 | 2SP190748 | Freehold | Bowen Basin Coal Pty Ltd | MLA 70383 |
| L12 | 2SP190749 | Freehold | Bowen Basin Coal Pty Ltd | MLA 70383 |
| L18 | 1SP235303 | Freehold | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| L2 | 26CNS125 | Lands Lease | Department Of Transport and Main Roads leased to Queensland Rail subleased to Aurizon Network Pty Ltd | N/A |
| L1 | 10SP208611 | Lands Lease | QCT Mining Pty Ltd QCT Investment Pty Ltd Mitsubishi Development Pty Ltd BHP Queensland Coal Investments Pty Ltd BHP Coal Pty Ltd | ML 1775 ML 70142 MLA 70459 |
| L2 | 2SP235303 | Freehold | Bengal Coal Pty Ltd | MLA 70383 |
| L13 | 5SP190749 | Freehold | Private landholder | MLA 70383 |
| L5 | 2CNS109 | Lands Lease | Department Of Transport and Main Roads leased to Queensland Rail subleased to Aurizon Network Pty Ltd | ML 70142 |
| L8 | 14CNS382 | Lands Lease | QCT Mining Pty Ltd QCT Investment Pty Ltd Mitsubishi Development Pty Ltd BHP Queensland Coal Investments Pty Ltd BHP Coal Pty Ltd | ML 1782 |
| L3 | 11SP208611 | Lands Lease | QCT Mining Pty Ltd QCT Investment Pty Ltd Mitsubishi Development Pty Ltd BHP Queensland Coal Investments Pty Ltd BHP Coal Pty Ltd | ML 70142 |
| L10 | 2SP260662 | Freehold | Bowen Basin Coal Pty Ltd | MLA 70383 |
| Map ID | Easement | Easement No | Registered Owner | Tenement |
| E30 | AASP215965 | 711888334 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd | MLA7 0383 |

| | | | | |
|-----|------------|-----------|---|-----------|
| | | | QCT Mining Pty Ltd QCT Resources Pty Ltd | |
| E23 | ABSP215965 | 711888334 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E6 | ACNS122 | 602296723 | Q.E.C. Ltd and Eungella Water Pipeline Pty Ltd | MLA 70383 |
| E8 | ACNS64 | 602798767 | Q.E.C. Ltd | MLA 70383 |
| E3 | ACNS65 | 711667955 | Eungella Water Pipeline Pty Ltd | ML 1775 |
| E19 | ACNS68 | 602806730 | Q.E.C. Ltd | MLA 70383 |
| E20 | ACSP215966 | 711888353 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E9 | ADSP215967 | 711888360 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E5 | AESP215968 | 711888379 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | ML 1775 |
| E24 | AFSP215969 | 711888420 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E14 | ASP208435 | 711061298 | Private landholder | MLA 70383 |
| E10 | BCNS119 | 602798768 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd | MLA 70383 |

| | | | | |
|-----|-------------|-------------------------------------|---|-----------|
| | | | QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | |
| E21 | BCNS120 | 602806731 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E17 | BSP208435 | 711061298 | Private landholder | MLA 70383 |
| E1 | CCNS63 | 711667955 | Eungella Water Pipeline Pty Ltd | MLA 70383 |
| E28 | CRP616865 | 601129746 | Q.E.C. Ltd | ML 1775 |
| E4 | CSP216045 | 711667955 | Eungella Water Pipeline Pty Ltd | MLA 70383 |
| E22 | DRP619505 | 601129747 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | ML 1775 |
| E16 | EASSP190749 | 711061212 711061220 711061298 | Bowen Basin Coal Pty Ltd Private landholder | MLA 70383 |
| E18 | EMTSP190748 | 711061212 711123594 711123594 | Bowen Basin Coal Pty Ltd | MLA 70383 |
| E30 | ESP193812 | 710384481 | Ergon Energy Corporation Ltd | MLA 70383 |
| E13 | FSP193813 | 710466226 | Ergon Energy Corporation Ltd | MLA 70383 |
| F11 | FSP206112 | 711194186 | Eungella Water Pipeline Pty Ltd | MLA 70383 |
| E31 | GSP190748 | 711061110 | Bowen Basin Coal Pty Ltd | MLA 70383 |
| E15 | GSP193814 | 710537910 | Ergon Energy Corporation Limited | MLA 70383 |
| E7 | GSP260662 | 715929927 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd | MLA 70383 |
| E26 | HSP190748 | 71104543 | BHP Coal Pty Ltd Umal Consolidated Pty Ltd | MLA 70383 |

| | | | | |
|-----|--------------------------------|-----------|---|-----------|
| | | | BHP Queensland Coal Investments Pty Ltd Mitsubishi Development Pty Ltd QCT Investment Pty Ltd QCT Mining Pty Ltd QCT Resources Pty Ltd Private landholder Bengal Coal Pty Ltd | |
| E27 | KSP209940 | 712076123 | Central Queensland Pipeline Pty Ltd | MLA 70383 |
| E29 | KSP268767 | 716100710 | Bengal Coal Pty Ltd | MLA 70383 |
| E19 | LSP209940 | 712076123 | Central Queensland Pipeline Pty Ltd | MLA 70383 |
| E12 | MSP209940 | 712076123 | Central Queensland Pipeline Pty Ltd | MLA 70383 |
| E25 | NSP268767 | 716100710 | Bengal Coal Pty Ltd | MLA 70383 |
| E2 | RSP209943 | 712020906 | Central Queensland Pipeline Pty Ltd | MLA 70383 |
| N/A | Road Parcel, Lake Vermont Road | N/A | Isaac Regional Council | MLA 70383 |

Several exploration permits for petroleum overlap with the Project site. Gas drainage and management for the Project will be undertaken in accordance with the requirements of the *Mineral Resources Act 1989* (MR Act) and the *Petroleum and Gas Act 2004*.

The Project site is located within the IRC LGA. IRC consists of the former Nebo, Belyando and Broadsound Shire Council areas. The majority of the Project site is located within the former Broadsound Shire Council LGA with a small proportion of the Project site, MLA 70459, being within the former Belyando Shire Council LGA. There is currently no consolidated planning scheme in force for IRC and the planning schemes of the former Councils remain in effect. Accordingly, relevant land use and planning aspects of the Project will be assessed against the *Broadsound Shire Planning Scheme*, the *Nebo Shire Planning Scheme* and the *Planning Scheme for the Belyando Shire*. Should a draft Planning Scheme for IRC be available for public comment at the time of preparing the EIS, the relevant provisions of this document will be given consideration in assessing the land use impacts of the Project.

The *Mackay, Isaac and Whitsunday Regional Plan*, released on 8 February 2012, will also be considered in assessing the land use impacts of the Project.

2.4 Resource characterisation

2.4.1 Regional stratigraphy

The target coal deposit is located in the northern part of the Permo-Triassic Bowen Basin containing principally fluvial and some marine sediments. The Bowen Basin is part of a connected group of Permo-Triassic basins in eastern Australia that includes the Sydney and Gunnedah Basins. The basins are oriented north-northwest to south-southeast, roughly parallel to the Paleozoic continental margin. Tectonically, the basin can be divided into north-northwest to south-southeast trending platforms or shelves separated by sedimentary troughs. A regional stratigraphic section is shown in Figure 2-3.

2.4.2 Stratigraphy of the Project area

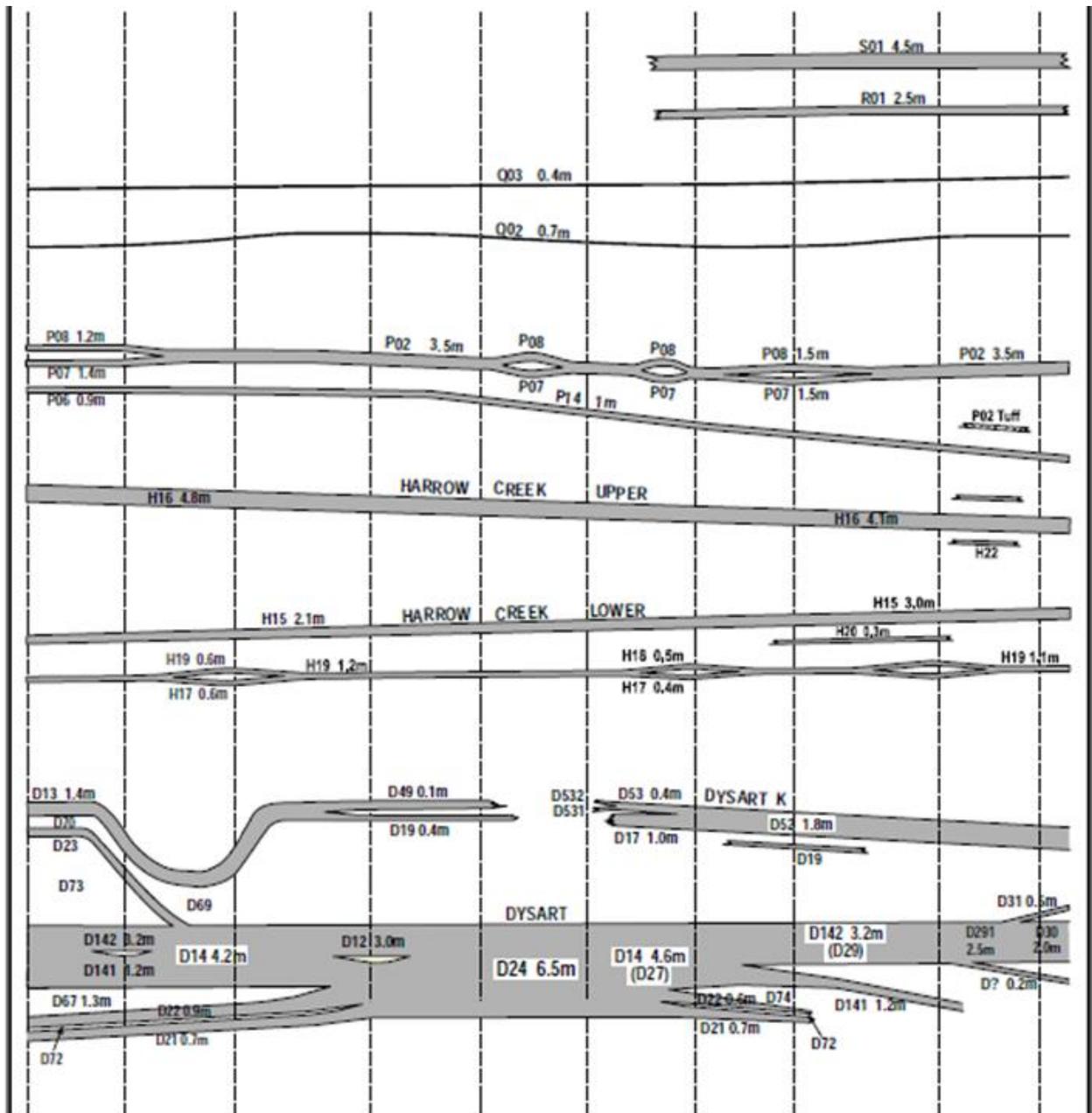
Structurally, the Saraji deposit is situated on the north-western margin of the Bowen Basin, west of the deformed Nebo Synclinorium on the southern end of the stable Collinsville Shelf. Two major coal bearing geological formations of Permian age are:

- Fort Cooper Coal Measures
- Moranbah Coal Measures.

Six coal seam groups exist over the Project area. These comprise:

- The Dysart series (equivalent to Goonyella Lower and German Creek/Lilyvale seams)
- Harrow Creek group (Goonyella Middle seam/Aquila/Tieri equivalent)
- P seams
- Q seams (Goonyella Upper equivalent)
- R seam
- S seam (lower-most seam of the overlying Fort Cooper Coal Measures).

■ Figure 2-3 Regional stratigraphy



The Moranbah Coal Measures are characterised by several laterally persistent, relatively thick coal seams interspersed with several thin minor seams. The major seams are the Dysart Lower (D24 and D14) seams and the Harrow Creek Upper (H16), with a number of thinner minor seams interspersed.

The Dysart Lower seam is located 17 metres (m) to 35 m below the Dysart Upper seam (D52). The D24 seam is typically seven metres thick near the northern end of the deposit but thins to the north and splits to the south into the D14 seam with thicknesses ranging from 4.5 m to 5.8 m. This seam is the target seam for

the Project. It is considered attractive underground target due to coking properties and the potential of high-quality pulverised coal injection resources that occur beyond the coking coal limit.

2.5 Mining methods

The depth and thickness of the coal seams throughout the disturbance area is such that underground mining provides the most effective method of extraction.

2.6 Mine entry

Access to the underground workings will be via a portal developed in the highwall of the existing mine. The access portal will cater for a conveyor, and incoming and outgoing movement of mining equipment and personnel. Initially, the access portal will be connected to a portal fan and act as the mine return until the down slope (down dip) main ventilation shaft is commissioned.

As part of the Project, the highwall will be designed and engineered to provide additional stability to support the underground portal entry and operations over a 25 to 30 year mine life. The design features of the highwall will include:

- a conservative angle of repose
- batter and drainage design
- pre-splitting the highwall to minimise fracturing of the highwall from blasting over break which occurs as cracks widen due to rain and exposure.

2.7 Coal extraction

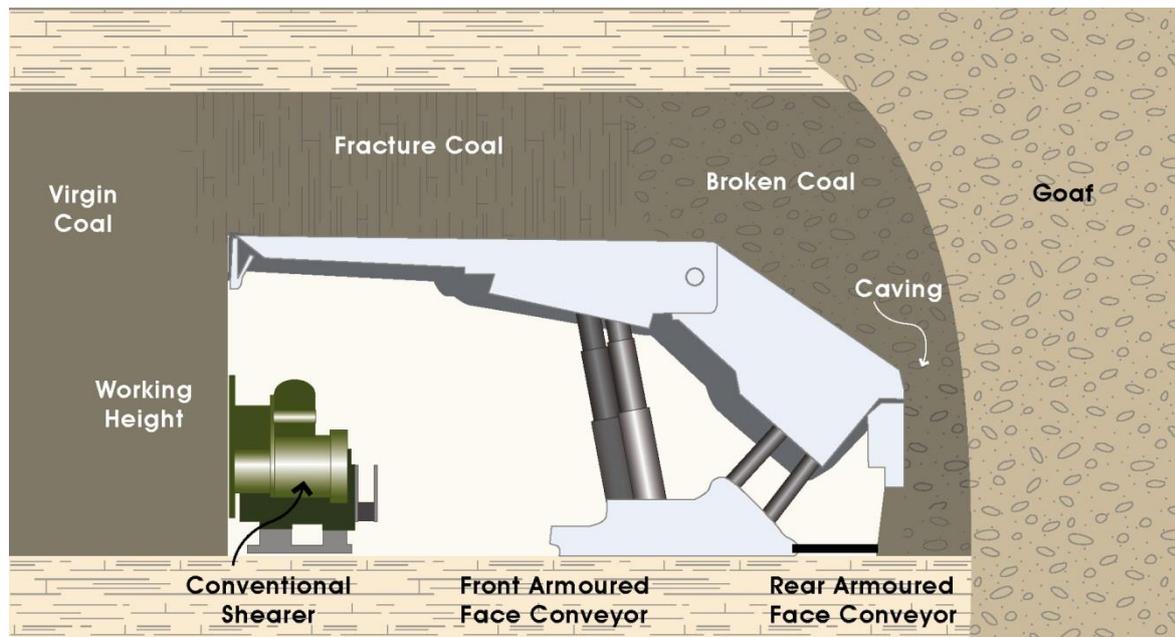
The Project will utilise thick seam mining methodologies, which minimises resource sterilisation and to allows a high percentage recovery of the thick seam resource. Each longwall panel will be up to approximately 320 m wide and up to 4,500 m long. There are multiple thick seam mining methods available; the preferred technique for the Project is Longwall Top Coal Caving. Longwall Top Coal Caving combines longwall coal cutting of the lower proportion of the coal seam accompanied by caving and reclamation of the upper 'top' proportion of the coal seam. The Longwall Top Coal Caving methodology supports mining of thick seams greater than 4.5 m such as those of the D24 seam.

In Longwall Top Coal Caving, coal is first cut from the longwall face using a conventional shearer and an armoured face conveyor arrangement. The conventional shearer works under hydraulic face supports, which incorporate a rear coal conveyor and cantilever/flipper arrangement. Face cutting heights are generally in the range of 2.8 m to 3 m to maximise the coal left for caving. The support advances forward after the shear and the rear conveyor remains in place for the caving sequence.

The caving sequence extracts the coal from the top of the seam. The remaining broken coal in the cavity above and at the rear of the supports at the top of the seam is referred to as the goaf coal. The caving sequence allows the broken coal to flow from the goaf onto the rear conveyor and through to the gate end transfer. The flow of coal onto the rear conveyor is controlled by retracting the rear cantilevers of selected supports, exposing the rear conveyor to the goaf coal which 'caves' into the free space. Once an area has

been caved, the rear cantilever is extended back out into the goaf, stopping any further influx of goaf material. The Longwall Top Coal Caving methodology is illustrated in Figure 2-4.

■ **Figure 2-4 Longwall top coal caving equipment**



2.8 Mining sequence and schedule

The timing for the development of the Project has not been finalised. However, Financial Year 2022 and Financial Year 2024 have been adopted as the commencement dates for construction and for long-wall coal production; respectively. For impact modelling purposes, the proposed underground extraction sequence is to commence longwall extraction in Financial Year 2024. Mining will then alternate north and south of the main headings, progressing to the east as the coal resources dip.

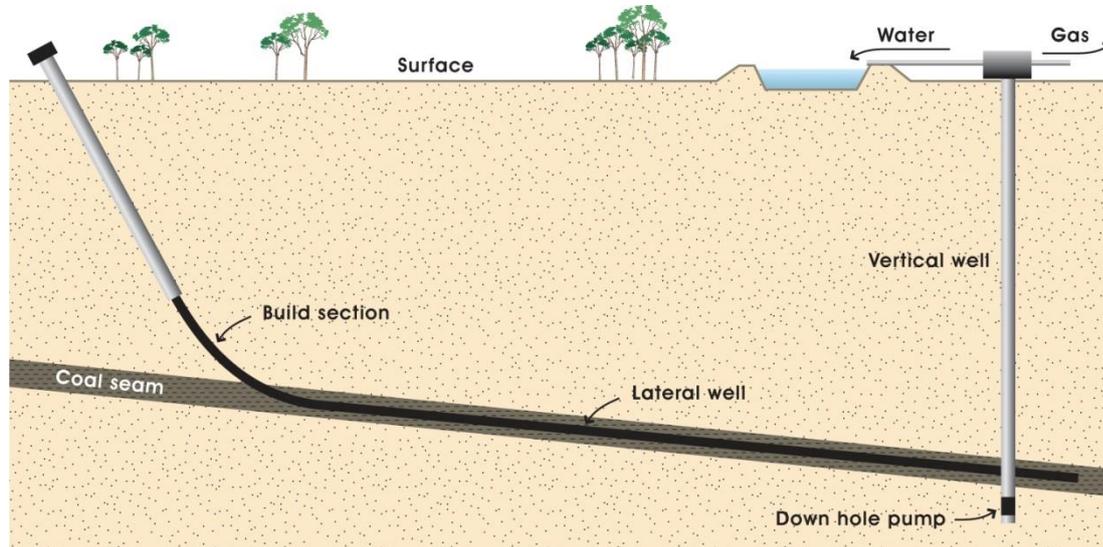
The rationale for the proposed mining program is to mine the thickest section of the seam first, in order to maximise hard coking coal production in the early years. The Dysart Lower seam (D24) seam supports thick seam mining which maximises production of the highest quality coal.

2.9 Gas drainage and management

Incidental mine gas is present in the two major coal bearing geological formations of the Project area. These formations are the Fort Cooper Coal Measures and Moranbah Coal Measures.

The Project will require construction of infrastructure to drain and manage incidental mine gas to enable the safe and efficient mining of coal. Figure 2-5 illustrates the incidental mine gas pre-drainage process.

■ **Figure 2-5 Incidental mine gas pre-drainage process**



An incidental mine gas hazard management strategy will be developed to reduce the associated risks. This will include:

- pre-drainage of coal measures prior to underground mining (pre-drainage methane)
- dilution of methane through mine ventilation during underground mining, known as ventilation air methane
- post-drainage of goaf after underground mining (goaf methane)
- co-development agreements are being discussed with relevant tenement holders to enable gas drainage activities which are expected to be resolved prior to granting of the mining lease.

2.10 Mine infrastructure and facilities

The Project is expected to require the following to facilitate mining:

- a new MIA
- a new CHPP
- a conveyor system to deliver coal from the underground portals to the CHPP and product coal to the rail loading facilities
- ROM stockpile and product stockpile pads
- a new rail spur and balloon loop and signalling system
- relocation of the existing Vermont water pipeline and existing 132 kV powerline into a new infrastructure and transport corridor to the eastern boundary of MLA 70383

- a network of gas drainage bores and associated surface infrastructure consisting of gas and water collection networks and access tracks across the underground mine footprint
- construction and operational accommodation villages (if required).

All reject and tailings material will be trucked to the Saraji Mine's in-pit spoil dumps.

Figure 2-1 details the Project layout and the supporting infrastructure. The approvals that may be required for the Project are identified in Table 5-1.

2.11 Water management

2.11.1 System overview

Water will be managed through a series of existing diversion drains and mine water dams designed to contemporary standards to comply with regulatory requirements.

Existing mine water dams will be used to manage dirty water runoff and water from mining and process activities. Runoff from undisturbed areas will be diverted away from disturbed areas to convey clean water downstream.

The water from mine water dams will be used to satisfy water demands of the existing Saraji Mine and the Project, including dust suppression and a proportion of demand from the CHPP. Raw water from BMA surface water allocations will be piped to the Project site to supply clean water, including the water requirements of the CHPP and longwall mining equipment as well as supplement site water demands as required.

2.11.2 Potable water treatment

A potable water treatment plant will be installed at the MIA to address the potable water demand for the Project. Effluent from the water treatment plant will be managed via the existing mine affected water management system.

2.12 Coal transportation

2.12.1 Train movements

Product coal will be transported along the existing Goonyella rail system that currently runs along the western boundary of the Saraji Mine ML 70142. The volume of coal to be transported via the network will be within Aurizon's existing approval limits. As such, no additional impacts are expected. A new rail spur, balloon loop and signalling system will be required to connect to the existing rail network. The product coal will be railed over a distance of approximately 250 km to ship loading facilities at the Hay Point Coal Terminal and/or approximately 400 km to the Abbot Point Coal Terminal. The Project may also consider haulage along a new greenfield railway between Goonyella and Abbot Point Coal Terminal.

2.12.2 Port capacity

Product coal from the Project will be exported to international markets via either:

- Hay Point Coal Terminal: located approximately 40 km south of Mackay and commenced operations in the 1970s. The Hay Point Coal Terminal is owned and operated by BMA.
- Abbott Point Coal Terminal: located approximately 25 km north of Bowen on the Central Queensland Coast.

The product coal shipped via these ports will be within the approved port and shipping capacity and throughput limits, as such no additional impacts to the surrounding environment are expected as a result.

2.12.3 Road transportation

The Dysart-Moranbah Road runs along the western edge of the proposed MIA. The Dysart-Moranbah Road is a sealed, two lane road and is under the jurisdiction of the IRC. Access to the MIA and the CHPP will require two new intersections into the Dysart-Moranbah Road. The proposed intersections will require approval from the Department of Transport and Main Roads (DTMR), QR and IRC.

2.12.4 Power supply

Annual average power demand will be confirmed as part of the EIS once a full assessment has been undertaken for the Project.

2.12.5 Relocation of existing powerlines

The existing 132 kV powerline, which is owned and operated by Powerlink, will be relocated to the eastern transport and infrastructure corridor. The 132 kV powerline has the potential to be impacted by subsidence associated with the Project's underground mining. BMA will enter into an agreement with Powerlink.

2.12.6 Water supply

The Project's water supply will be linked to the existing Saraji Mine complex water management system.

An important aspect of the operational strategy for the Saraji Mine complex water management system is to reuse mine water wherever possible as a priority over external pipeline raw water supply. This has sustainability benefits in making the mine as self-sufficient as possible and minimising the mine's reliance on external water supplies. It is also important to manage the storage inventory (total mine water volumes) in the mine water management system so that adequate storage can be made available for the containment of wet seasonal conditions.

Not all of the mine's operational water requirements can be met with reused mine water. Some of the water requirements for the operations require high quality water sourced from external pipeline raw water supply. This raw water demand forms a very small portion of the overall site water use and includes:

- water treated for potable uses (drinking, washrooms)

- a small quantity of water required for the CHPP. While most of the water demand for the CHPP is met through recycled water, a minor component (typically 3%) of the CHPP water use requires raw water.

BMA holds substantial allocations of water from the Fitzroy and Burdekin water catchments and numerous licences to interfere with and take water across BMA's mine sites. BMA operates a substantial water pipeline network in Central Queensland, servicing its mines, landholders and towns.

BMA holds contractual rights to approximately 10,000 mega litres per year (ML/year) of water from the Burdekin Pipeline (owned by SunWater) that is a supply source for BMA operations in the vicinity of Moranbah. In addition, BMA has a water allocation of 6,200 ML/year from the Eungella Dam that is also available for use in BMA operations in the Moranbah vicinity. In securing its water rights, BMA has allowed for the current and potential future use of water from these sources at the Saraji Mine complex and for growth options associated with MLA 70383.

In relation to the proposed activities on MLA 70383, BMA will prepare, update and maintain a Water Management Plan.

The Plan will recognise that water to be used for Project operations will be sourced via an off-take from the existing water pipelines developed to support BMA's current and future mining operations, along with various other purposes. Further, this Plan will recognise that water will be sourced from the Eungella Dam and/or the Burdekin Pipeline. The Project will have an internal BMA allocation to draw water as part of the BMA-related water allocations. These allocations are held by BMA directly or indirectly via contractual arrangements with SunWater in accordance with the Burdekin Water Resource Plan and the *Water Act 2000*.

Annual average water demand will be confirmed and evaluated in the EIS once a full assessment has been undertaken for the Project.

2.12.7 Relocation of the existing EWPC Southern Extension Water Pipeline

The existing EWPC Southern Extension Water Pipeline, which supplies water to the Lake Vermont Mine, has the potential to be impacted by subsidence associated with the Project's underground mining operations. Options to manage the impacts of subsidence on the pipeline include the potential relocation of the pipeline.

2.12.8 Sewage treatment

If required, a sewage treatment plant will be installed to service the MIA and the Accommodation Villages to treat all site sewage generated. Effluent from the sewage treatment plant will be managed as part of the overall existing Saraji Mine water management system.

2.12.9 Telecommunications

The telecommunications network will be managed by extending the services from the Saraji Mine through to the Project site via the existing service corridor. This system will allow for easy connection through to existing BMA systems. Telecommunications will be controlled and monitored through the Project control room.

2.12.10 Fuel and lubricant storage

Fuel (diesel and unleaded petroleum) and lubricant storage and transfer facilities will include self banded storage tanks, banded delivery areas and electronic management systems.

2.13 Decommissioning and rehabilitation

In consultation with relevant stakeholders, BMA will review all infrastructure assets towards the close of the Project and assess which structures will be retained, sold for recycling, relocated or disposed of as general or regulated waste. Recycling and re-use of the Project's redundant infrastructure using local contractors will be promoted by BMA.

A rehabilitation strategy and management plan will be developed to set objectives for the rehabilitation of disturbed land that will occur as a result from the Project. Mine rehabilitation will be achieved through the creation of rehabilitation success criteria and monitoring requirements under the Project's EA.

Rehabilitation of disturbed land will generally proceed within two years of the areas becoming available for rehabilitation. In areas where it is not possible for complete rehabilitation to take place due to integration into other active mining activities, temporary rehabilitation methods will be carried out on these areas to provide short-term stabilisation of these areas.

Rehabilitation of disturbed land at the mine site will be conducted so that:

- suitable species of vegetation are planted and established to achieve the post-mine land uses
- potential for water and wind erosion is minimised
- surface water and seepage released from the site is such that releases of contaminants are not likely to cause environmental harm
- water quality of any residual water bodies meets regulatory criteria so as to not cause environmental harm
- final landform is stable, safe and not subject to slumping or erosion.

2.14 Interrelationship with the existing Saraji Mine

The Project will share some facilities with the existing adjacent Saraji Mine. This proximity to the Saraji Mine will provide BMA with the operational flexibility to:

- use open-cut spoil dumps to distribute and dispose of dewatered tailing and rejects from the Project's CHPP
- use an integrated water management system for the two mines while they are both operating
- use excess mine water at the Saraji Mine during construction and potentially to supplement supply during operation

- use the existing open-cut pits for mine access and highwall entry to limit the environmental impacts, costs, time and risks involved in construction of new mine portals
- locate and construct above-ground infrastructure, including MIA within previously disturbed areas on the Saraji Mine.

3 Existing environment and potential impacts

3.1 Land

The Project area is representative of a broader region, which is generally highly modified for mining, grazing and agricultural activities.

Existing land uses within the EIS study area and surrounds are described below:

- biophysical elements (such as the Isaac River and associated tributaries)
- mining and coal exploration activities
- agricultural activities such as:
 - cattle grazing
 - farming infrastructure (access tracks, fences, stockyards and sheds)
 - residential and urban land uses including several rural residential dwellings (homesteads) that are located within or nearby the Project area.

The topography of the Project area is generally flat to undulating plains with several defined creeks and Brigalow Scrub soils. The potential impacts of the Project on existing land resources include:

- changes in topography and land-use through subsidence
- ground preparation for mine infrastructure including the CHPP, rail spur and balloon loop, water pipeline, conveyors and MIA.

The Strategic Cropping Area is an area of regional interest under the *Regional Planning Interests Act 2014* (RPI Act). Any new resource activities proposed in the Strategic Cropping Area must comply with the provisions of the RPI Act. Preliminary investigations indicate that State-mapped Strategic Cropping Land (SCL) is located on the Project site, in the southern section of MLA 70383. This is illustrated in Figure 3-1. No development is planned for the southern section and as such there is no expected impact on SCL.

The EIS will assess the impacts of the Project on existing land resources, including subsidence modelling and a search of the Environmental Management Register and Contaminated Land Register. The EIS will present any relevant mitigation measures that may be required.

The EIS will also investigate and detail a rehabilitation strategy of subsided and disturbed areas.

3.2 Surface water

The Project is located within the Isaac River catchment which forms part of the Fitzroy River basin. The surface water resources relevant to the Project include sections of Boomerang Creek, Hughes Creek and Plumtree Creek. All of the watercourses drain into the Isaac River which form part of the Fitzroy River Basin catchment and is legislated under the *Water Resource (Fitzroy Basin) Plan 2011*.

All of the watercourses in and around the Project are ephemeral. The Project is located in the downstream reaches of the catchment where the creeks are relatively well-defined. The Project is located directly downstream of the Saraji Mine. Boomerang and Hughes Creeks are currently diverted upstream of the Project by the existing Peak Downs Mine (Boomerang Creek diversion) and the Saraji Mine (Hughes Creek diversion), refer to Figure 3-1. These creek diversions discharge to the natural reaches of the creeks at the upstream extent of the Project site.

The Saraji and Peak Downs Mine diversions were designed to provide a flood immunity of 1 in 1,000 Annual Exceedance Probability (AEP). These diversions will be maintained as part of the Project to provide flood immunity to infrastructure and highwall entry. A comprehensive flood assessment will be undertaken as part of the EIS.

The potential impacts of the Project on surface water resources include:

- changes to surface drainage including flow paths, flow velocities and flood inundation areas
- runoff from disturbed areas such as MIAs and stockpiles impacting on downstream water quality and quantity
- mine-affected water from processing and underground mining
- surface water quality impacts from the discharge of mine affected water, stormwater with elevated suspended sediment loads or other contaminants
- reduced downstream flows due to reduction in the contributing catchment as a result of the open cut pit and/or mine dewatering.

A mine water management assessment will be undertaken to assess the performance of the proposed mine water management plan. This assessment will include development of strategies to manage mine-affected water, sediment-affected water and drainage from areas not disturbed by mining activities. A water balance model will be developed to simulate the performance of the mine water management system over the life of the Project and ensure that mine water storages are adequately sized to maximise the re-use of water, whilst minimising the need for discharge of mine-affected water. The water balance model will provide input to the design and layout of mine water management infrastructure associated with the Project. These design measures will ensure that the potential for impacts to surface water quality are minimised.

Modelling of surface drainage will be used to inform mine planning, location of mine infrastructure and ensure an appropriate site drainage design. Site drainage infrastructure will be designed in accordance with relevant standards and with sufficient capacity to convey surface flows through the Project site, in both the operations and post-closure phases.

Detailed flood and drainage impact assessment will be undertaken to identify and mitigate surface water impacts. This assessment will include hydrologic and hydraulic modelling of a range of flood events to determine the potential geomorphic and surface water impacts of the Project. The outcomes of the surface water assessment and flood modelling will be used to determine the potential for flooding and geomorphic impacts, and any necessary mitigation measures. Mitigation measures may include preventative works and engineered structures to ensure stability of drainage features that may be impacted by the Project.

To minimise and manage impacts from the construction of the mine and associated infrastructure, a water management system will be developed for the Project. The objectives of the water management system are to:

- achieve optimal reliability of water supply for coal processing and dust suppression
- minimise the take from the surface water allocation
- direct water from undisturbed areas away from Project operations
- minimise both controlled and uncontrolled releases from the sites.

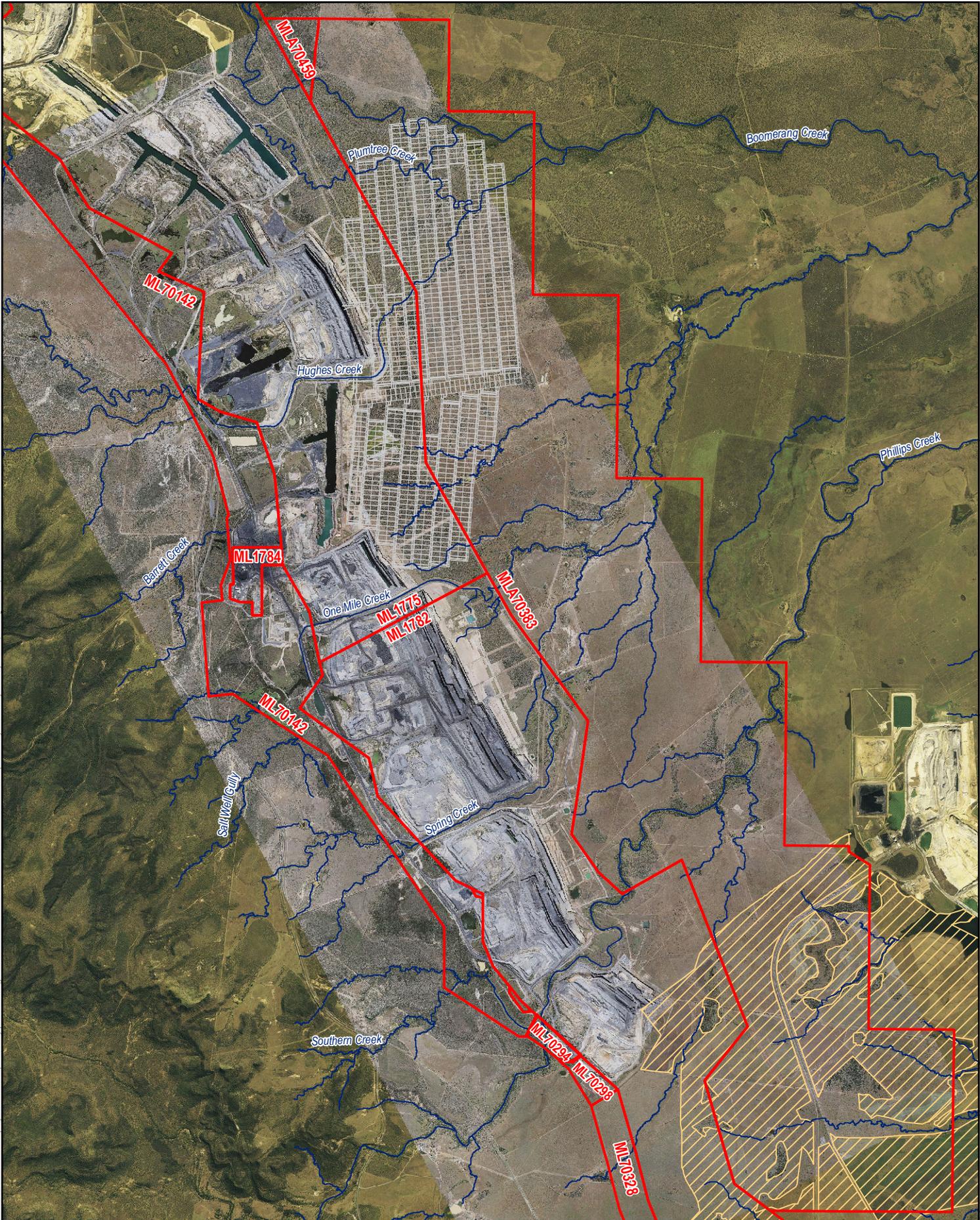
Mitigation strategies will be implemented to reduce potential impacts on surface water flows and quality. The following principles and measures may be employed:

- Runoff from undisturbed areas of the Project site and its vicinity will be diverted away from disturbed areas by diversion bunds and drains which will drain via diverted creeks and natural watercourses.
- Runoff from disturbed areas of the Project will be diverted away from undisturbed areas, stored and used preferentially to satisfy the Project's dust suppression and CHPP process water demands.
- Runoff from the disturbed areas of the Saraji Mine will be bunded and managed under the existing Saraji Mine water management system.
- Direct rainfall over the Saraji Mine's existing pit areas that the Saraji East underground workings will be accessed from, will be captured and managed as part of the Project. The highwall portal will be designed to provide 1 in 1,000 year AEP flood immunity to the underground workings. This will be provided through in-pit sumps and an elevated entry to the underground workings. Water will be captured in the pits and will be transferred when required to maintain the flood immunity.
- Controlled releases will be made in accordance with the principles outlined in the Final Model Water Conditions for Coal Mines in the Fitzroy Basin (DERM, July 2011) as reflected in the EA for the mine.
- Water quality impacts from release of mine affected water will be managed under EA issued by EHP. The Project EA will specify water quality limits, discharges volumes and certain times of the year when discharges are authorised to occur.
- Best management erosion and sediment control practices will be applied to construction works and mining operations to prevent the generation of sediment and its transport to waterways. Sediment control structures, such as sediment ponds, will be designed and constructed on site to trap runoff. The sediment ponds will hold sediment-contaminated runoff long enough to allow suspended sediment to settle out naturally or through the use of flocculants/filtration, to be acceptable for discharge (IECA, 2006). This water will be preferentially reused for activities such as dust suppression.
- Treated effluent from the sewage and waste treatment plants at the Project site will be discharged to the mine water management system.

- The storage of chemicals and fuel on site will be kept to minimum levels. Storage units will be bunded and staff will be trained in appropriate chemical handling and emergency management procedures.

These strategies will be further developed as part of the EIS and may include the diversion of creeks around and through areas of subsidence to provide conveyance of clean water flows downstream.

AECOM does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AECOM shall bear no responsibility or liability for any errors, faults, defects, or omissions in the information.



- LEGEND**
- Creek
 - Proposed Underground Mine Layout
 - Strategic Cropping Land
 - BMA Tenure / Tenement

Figure 3-1
Waterways and
Strategic Cropping Land

Initial Advice Statement
Saraji East Mining Lease Project

0 0.5 1 2
Kilometres

Scale: 1:100,000 (when printed at A4)

Projection: Map Grid of Australia - Zone 55 (GDA94)

- Data sources:
1. Tenements, Creeks and SCL © BMA 2016 (FRI)
 2. BMA Imagery 29 May 2016
 3. QLD SISIP Imagery 2012.



BMA
BHP Billiton Mitsubishi Alliance

DATE: 14/10/2016 VERSION: 0

3.3 Groundwater

The Project is located in the Highlands subartesian area which is a declared subartesian area under the Water Regulation 2002 (subordinate to the *Water Act 2000*). Groundwater investigations within the region have been undertaken to support existing mining activities and geotechnical investigations. Existing data identifies aquifers within the Quaternary and Tertiary sediments as well as coal seams. The Dysart seam is the thickest of the coal seams and is an important coal seam aquifer. Groundwater in the vicinity of the Project is primarily used for stock watering.

Mining activities have the potential to impact the groundwater regime due to the depressurisation of aquifers as a result of underground mining and the release of pollutants impacting groundwater quality.

Underground mining is likely to result in localised drawdown or depressurisation of adjacent groundwater units. Additionally, subsidence associated with underground longwall mining will result in subsidence cracking that could also depressurise overlying groundwater units. Subsidence cracking can also increase the potential for interaction between adjacent groundwater units and interactions with surface water.

The potential impacts of aquifer depressurisation due to mining on aquifers, private groundwater bores and groundwater dependent ecosystems will be assessed in detail as part of the EIS groundwater assessment.

Potential sources of groundwater contamination associated with the proposed mining activities include seepage from the tailings and mine waste storage facilities, mine water dams and the storage of chemicals. The mine waste storage facilities and mine water dams will be designed to ensure they do not pose a significant risk of groundwater contamination due to seepage.

The potential impact of the Project on groundwater and surface water resources will be assessed as part of the EIS that will be undertaken for the Project. The surface water management measures outlined in Section 3.2 will also act to mitigate impacts to groundwater. In addition, the following measures will be implemented to confirm the efficacy of the proposed measures whilst ensuring that any drawdown impacts to existing users are appropriately addressed:

- validation of predictive groundwater impacts: the development of investigation instigation triggers so as to ensure the early implementation of groundwater management actions to prevent possible environmental harm
- the compilation of a suitable groundwater management and monitoring plan
- the development of make good agreements and commitments to address possible groundwater resource reduction - both direct groundwater use and environmental availability.

3.4 Flora

The Project site is part of the Brigalow Belt North Bioregion. Several floristic surveys of the Project site have been carried out between 2007 and 2016. Although a significant proportion of the Project site is used for grazing, remnant communities of native vegetation occur in MLA 70383 and MLs 1755 and 70142. The field surveys recorded a total of 304 species of vascular plants from 41 different families. Of these, 39 are exotic species with five declared weeds under the *Land Protection (Stock and Pest Route Management) Act 2002*.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool listed one threatened flora species (*Cycas ophiolitica* (Marlborough blue)) as potentially occurring within or adjacent to the Project site. No records of threatened flora species were available from the Queensland Wildlife Online database or Atlas of Living Australia within a 10 km buffer of the central point of the Project site. Further, *Cycas ophiolitica* was not identified during extensive field surveys.

Two Threatened Ecological Communities (TECs) listed under the EPBC Act have been identified as potentially occurring within or adjacent to the Project site:

- Brigalow (*Acacia harpophylla* dominant and co-dominant). This TEC corresponds to a number of Regional Ecosystems (REs), several of which (RE 11.4.8 and 11.4.9) have been identified on site by Queensland Government mapping and confirmed during field surveys.
- Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin. The corresponding REs for this TEC are not mapped within the Project site and it has not been identified throughout comprehensive flora surveys. Corresponding RE 11.4.4 has been identified within the MLA; however this is outside of the Project site and will not be disturbed by the Project.

The EIS will assess the nature and extent of the terrestrial and aquatic flora and vegetation communities within the Project site, along with an assessment of the potential impacts from the Project. The EIS will also present appropriate mitigation measures to address terrestrial and aquatic flora impacts.

3.5 Fauna

Four previous fauna surveys have been undertaken across the Project site. Additional field surveys are scheduled for 2017. Two comprehensive fauna surveys were undertaken in 2007 and 2010, a targeted survey in 2009 and a winter fauna survey in 2011. A total of 172 vertebrate fauna species were recorded during the field surveys, comprising 14 amphibians (including one exotic species), 23 reptiles, 108 birds and 27 mammals (including seven exotic species).

A list of Endangered, Vulnerable and Near Threatened fauna species of state and national conservation significance that have been identified as potentially occurring within the Project site is provided in Table 3-1 along with the status of the fauna species under the EPBC Act and *Nature Conservation Act 1992* (NC Act).

■ Table 3-1 Fauna species potentially occurring within the Project site

| Scientific Name | Common Name | EPBC Act Status ¹ | NC Act Status ² |
|---|------------------------------|------------------------------|----------------------------|
| Birds | | | |
| <i>Erythrotriorchis radiates</i> | Red goshawk | V | E |
| <i>Geophaps scripta scripta</i> | Squatter pigeon (southern) | V | V |
| <i>Grantiella picta</i> | Painted honeyeater | V | V |
| <i>Neochmia ruficauda ruficauda</i> | Star finch (eastern) | E | E |
| <i>Rostratula australis</i> | Australian painted snipe | V | V |
| Mammals | | | |
| <i>Dasyurus hallucatus</i> | Northern quoll | E | - |
| <i>Macroderma gigas</i> | Ghost bat | V | V |
| <i>Nyctophilus corbeni</i> ² | South-eastern long-eared bat | V | V |

| Scientific Name | Common Name | EPBC Act Status ¹ | NC Act Status ² |
|---|-------------------------------|------------------------------|----------------------------|
| <i>Petauroides volans</i> | Greater glider | V | - |
| <i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT). | Koala | V | V |
| Reptiles | | | |
| <i>Denisonia maculata</i> | Ornamental snake | V | V |
| <i>Egernia rugosa</i> | Yakka skink | V | V |
| <i>Elseya albagula</i> | Southern snapping turtle | CE | E |
| <i>Furina dunmalli</i> | Dunmall's snake | V | V |
| <i>Lerista allanae</i> | Allan's lerista, retro slider | E | E |
| <i>Rheodytes leukops</i> | Fitzroy River turtle | V | V |

¹ - Status under the EPBC Act: E (endangered), V (vulnerable); CE (Critically Endangered). ² - Status under the NC Act: E (endangered), V (vulnerable); Near Threatened (NT).

Four of these species have been recorded within or directly adjacent to the Project site. These are:

- Ornamental snake (*Denisonia maculata*)
- Australian painted snipe (*Rostratula australis*)
- Greater glider (*Petauroides volans*), and
- Squatter pigeon (*Geophaps scripta scripta*).

Migratory species listed under the EPBC Act that have the potential to occur within the Project site are provided in Table 3-2.

■ **Table 3-2 Listed EPBC Act migratory species potentially occurring within Project site**

| Scientific Name | Common Name | EPBC Act Status ¹ |
|-----------------------------|---------------------|------------------------------|
| <i>Apus pacificus</i> | Fork-tailed swift | M |
| <i>Cuculus optatus</i> | Oriental cuckoo | M |
| <i>Gallinago hardwickii</i> | Latham's snipe | M |
| <i>Hydroprogne caspia</i> | Caspian tern | M |
| <i>Monarcha melanopsis</i> | Black-faced monarch | M |
| <i>Motacilla flava</i> | Yellow wagtail | M |
| <i>Myiagra cyanoleuca</i> | Satin flycatcher | M |
| <i>Pandion haliaetus</i> | Osprey | M |
| <i>Rhipidura rufifrons</i> | Rufous fantail | M |
| <i>Tringa nebularia</i> | Common greenshank | M |

¹ - Status under the EPBC Act: M (migratory)

Two of these species have been recorded within or directly adjacent to the Project site. These species are:

- Caspian tern (*Hydroprogne caspia*)
- Rufous fantail (*Rhipidura rufifrons*).

The EIS will assess the potential impacts to terrestrial and aquatic fauna from the Project including clearing for mine infrastructure and subsidence impacts on habitat and watercourses. The EIS will also present appropriate mitigation measures to address terrestrial and aquatic fauna impacts.

3.6 Air quality

Air quality in the region is mainly influenced by pastoral activities, open-cut mining, and nearby rail and road transportation activities. Sensitive receptors will be confirmed during the EIS.

The principal dust sources from the Project during construction will include earthworks and increased traffic movements. The principal dust sources from the Project during operations will include heavy mining equipment movements and coal handling and processing. The EIS will investigate a range of air quality issues including dust deposition and will identify potential sensitive receptors. A predictive air quality model will be developed to support the impact assessment process.

3.7 Greenhouse gases

The EIS will estimate the quantity of greenhouse gases (including direct and indirect emissions) attributable to the Project. This information will be used to assess mitigation strategies in the EIS and to provide an appropriate context for actions that are being undertaken by BMA.

3.8 Noise and vibration

Noise and vibration sources from the Project will include mining (vehicle movements and underground mining equipment) and processing activities (CHPP, conveyors, crushers, screens, loading) and gas drainage. The level of noise at a given sensitive receptor will vary depending on the type of machinery in use and traffic in the area.

A baseline noise survey has been undertaken which identified a number of sensitive receptors within the vicinity of the Project site. These sensitive receptors are residential premises associated with agricultural land uses. Sensitive receptors will be confirmed during the EIS. A predictive noise model will be developed to support the impact assessment process. This information will be used in the development of appropriate mitigation strategies to reduce noise and vibration impacts from the Project as part of the EIS.

3.9 Visual amenity

The regional and local landscape surrounding the Project site is considered to be generally representative of the Bowen Basin region. The regional and local landscapes contain a number of different landscape character types that provide an ever-changing visual environment.

Mining is the predominant activity within the region and as such, facilities and activities associated with this use are visible. With exception to the presence of grazing land, human elements within the landscape, such as roads and townships, are relatively sparsely located and have developed primarily to support the mining operations. Sealed roads vary in quality and width and provide an integral network between mine sites, townships and rail lines.

Project infrastructure that may have adverse impacts on the visual amenity include mine pits, storage dams, the CHPP, conveyors, pipelines, rail infrastructure and administration buildings. The EIS will present an

assessment of the potential impacts that these features may have on the existing landscape and proposed mitigation measures.

3.10 Waste management

The Project will include the generation of general commercial and industrial waste products. These wastes may include:

- vegetation cleared from areas to be disturbed by the Project
- regulated waste (hydrocarbon waste, detergents, solvents, batteries and tyres)
- general waste (food scraps, paper, rags, cans and glass)
- scrap metal and off-cuts from maintenance activities and from the construction of the CHPP, water supply pipeline and MIA.
- sewage effluent and sludge.

A Waste Management Plan will be prepared for the Project. This will ensure that all wastes are managed appropriately during the construction and operational phases of the Project.

3.11 Cultural heritage

As part of the EIS, assessment of the Aboriginal cultural heritage values of the Project site will be undertaken in consultation with the Barada Barna people. A Cultural Heritage Management Plan (CHMP) will be developed prior to the commencement of construction and operational activities.

The EIS will also survey and evaluate the significance of any European heritage sites that may be present within the Project site.

3.12 Social and economic conditions

The area surrounding the Project supports mining, gas and agricultural activities. Dysart, the nearest township was established in 1973 and predominately provides services to the mining sector. In particular, the town services BMA's Saraji and Peak Downs Mines. The town has an estimated population of approximately 3,000 (QGSO, 2016).

The Project's key activities may result in changes to the socio-economic environment. The EIS will examine the potential impacts and provide opportunities to enhance the benefits of the Project.

To ensure these issues are well understood, stakeholders, including community members, will be consulted as part of the EIS process. This process is discussed further in Section 4.1.

3.13 Traffic and transport

The traffic and transportation issues relating to the Project are not considered to have a significant impact on the surrounding area. Operationally there are limited impacts. The coal will be transported via conveyor to the loadout facility and transported by rail to the Port. Section 2.12 provides further detail about the proposed

coal transportation methods. The key potential impacts are the increase in construction traffic during project development and the impacts of the additional workforce on the capacity of the existing road network.

The EIS will include a Traffic Impact Assessment (TIA) and detail how potential impacts will be managed.

3.14 Hazard, risks and safety

The EIS will include a hazard and risk assessment process in order to identify and manage the risks associated with the construction, operation and decommissioning phases of the Project. The risk assessment process will ensure the effective management of all risks associated with construction and operation of the Project.

4 Environmental and social management

The EIS will describe the measures that will be undertaken to prevent or mitigate any potential adverse impacts on the environment, including impacts on water resources (surface water and groundwater), land resources, air quality (including greenhouse gases), noise and vibration, cultural heritage (including indigenous and non-indigenous), and flora and fauna of conservation significance.

An Environmental Commitments Register (ECR) will be prepared for the Project. The ECR will contain:

- environmental values likely to be affected by mining activities
- potential adverse and beneficial impacts of the mining activities on the environmental values
- environmental protection objectives
- control strategies adopted to achieve the environmental protection objectives, and
- proposed EA conditions.

The EIS will also address the potential for social impacts and present mitigation strategies to manage any potentially adverse impacts if required. Social impact management measures will be developed for the Project should they be required.

4.1 Stakeholder consultation

A Stakeholder Engagement and Communications Plan (SECP) will be developed for the Project.

BMA intends to work with and maintain open communication with the stakeholders on all aspects of the Project. Key objectives of this plan will be to:

- initiate and maintain open communication with the stakeholders on all aspects of the Project
- identify community issues and concerns in relation to the Project
- target specific stakeholders to help identify potential social impacts and develop appropriate mitigation strategies
- respond to and work with the stakeholders to develop appropriate solutions and strategies to minimise negative impacts associated with the Project
- address stakeholder issues through the EIS process and communications
- continue the long-term relationship between BMA and the stakeholders that is based on mutual trust and respect
- provide feedback to the stakeholders about their issues and concerns and how their feedback has been used
- manage a process which uses existing stakeholder contact points and avenues for discussion.

To achieve the objectives outlined in the plan, the stakeholder engagement process will involve:

- planning for and implementing opportunities for stakeholders to comment on the potential impacts of the Project

- obtaining, considering and responding to stakeholder comments and issues of concern
- building on information developed by BMA during the planning process for the Project.

BMA will undertake formal public consultation with the stakeholders as part of the EIS process.

5 Legislative requirements

A preliminary review has been undertaken to identify the statutory approvals that may be required for the lawful development of the Project. The statutory framework applicable to the Project's development is administered by:

- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environmental Protection Act 1994*
- *Local Government Act 2009*
- *Mineral Resources Act 1989*
- *Mineral and Energy Resources (Common Provisions) Act 2014*
- *Nature Conservation Act 1992*
- *Sustainable Planning Act 2009*
- *Water Act 2000*
- *Regional Planning Interests Act 2014*
- *Aboriginal Cultural Heritage Act 2003*
- *Land Title Act 1994*
- *Transport Infrastructure Act 1994*
- *Forestry Act 1959*
- *Electricity Act 1994*
- *Fisheries Act 1994*
- *Vegetation Management Act 1999.*

The Commonwealth, State, and local government approval requirements that may be relevant to the Project are summarised in Table 5-1.

It is noted that the Project will be subject to a MLA process pursuant to the MR Act. The Project activities will be authorised by an EA granted under the EP Act. The Project may involve development both on and off-lease.

For development on the ML, a number of approval exemptions will apply including:

- exemptions from the SP Act as per Section 4A of the MR Act (excluding matters relating to Queensland heritage places and building work)
- exemptions from assessment against local government planning schemes as per Schedule 4, Table 5, Item 1(a) of the Sustainable Planning Regulation 2009 (SP Regulation)
- an exemption from the *Vegetation Management Act 1999* for clearing native vegetation in accordance with Schedule 24, Part 1, Item 1(6), of the SP Regulation.

For the components of the project located off-lease, the above exemptions will not apply.

■ **Table 5-1 Indicative statutory approvals**

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|---|--|--|--|--|
| Environment Protection and Biodiversity Conservation Act 1999 | Proposed Action Referral for impact to Matters of National Environmental Significance (MNES) | DEE | Referral for actions that have, or are likely to have a significant impact on a matter of MNES as per Section 68 of the EPBC Act: | The EPBC Act identifies nine matters of MNES, of which threatened ecological communities, threatened species and listed migratory species are of relevance to the Project. A Proposed Action Referral is currently being prepared for the Project. Preliminary advice received from the DEE indicates the Project is likely to be a Controlled Action. Approval relevant to whole Project site. |
| Mineral Resources Act 1989 | Mining Lease | Department of Natural Resources and Mines (DNRM) | Carrying out mining operations in respect of those minerals specified in either the prospecting permit, exploration permit or mineral development licence held prior to the grant of the lease. | BMA has applied for two MLs for the Project activities (MLA 70383 and MLA 70459). |
| Mineral and Energy Resources (Common Provisions) Act 2014 (will commence 27 September 2016) | Various provisions governing resource tenures | DNRM | Provisions relating to: the registration of dealings and caveats the making of a new Land Access Code access to private land, public land and restricted land the negotiation of conduct and compensation agreements overlapping coal and petroleum resource authorities. | New provisions may influence co-development agreement with Arrow and other land access requirements for the Project. |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|--|--|-------------------------|--|--|
| Environmental Protection Act 1994 | EA for Resource Activity | EHP | An EA is required to authorise the mining activities. The environmental authority will also authorise Environmentally Relevant Activities (ERAs) (ancillary activities). | For off-tenure ancillary activities, a separate EA application is required for prescribed ERAs. If the EAs are granted, these can be amalgamated into a single EA with the EA granted for the mining activities. |
| <i>Environmental Protection Act 1994</i> | Notification of Notifiable Activities | EHP | Landowners and occupiers must notify the EHP within 22 business days of becoming aware of a notifiable activity. There are penalties for non-compliance. | Schedule 3 of the <i>Environmental Protection Act 1994</i> lists all of the notifiable activities. Potential notifiable activities associated with the Project include: Notifiable Activity 7 - Chemical storage Notifiable Activity 32 - Railway yards Notifiable Activity 37 - Waste storage, treatment or disposal |
| <i>Environmental Protection Act 1994</i> | ERA | EHP | ERA 31 is triggered when processing 100,000t or more of mineral products in a year | ERA triggered for proposed black coal mining, all other ancillary ERAs supporting the Project are to be confirmed during EIS process. |
| <i>Environmental Offsets Act 2014</i> | Condition/s of approval within Environmental Authority for Resource Activity | EHP | An environmental offset may be required as a condition of approval where, following consideration of avoidance and mitigation measures, the activity is likely to result in a significant residual impact on prescribed environmental matters. | The Project site may contain prescribed environmental matters as defined on Section 10 of the Offsets Act and Section 5 and Schedule 2 of the Offsets Regulation. Should the project have a significant impact on these matters there may be a requirement for offsets. |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|--|--|---|--|--|
| Sustainable Planning Act 2009 and applicable local government planning schemes (Belyando Planning Scheme and Broadsound Planning Scheme) | Development Permits for Material Change of Use and Operational Works | IRC | A change to the current use of premise for off-lease infrastructure related to the Project. | Construction of a new 66 kV powerline and a new 40 km extension of the western corridor water supply pipeline. A permit for extractive activities may be required where the Project results in undertaking quarry activities off-lease. |
| Sustainable Planning Act 2009 Building Act 1975 | Development Permit for Building Work | IRC and where appropriate registered private certifiers | Construction of a building or other structure. | Accommodation villages and any other building or structure associated with the Project. |
| <i>Sustainable Planning Act 2009</i> <i>Fisheries Act 1994</i> | Development Permit for Operational Works (Waterway Barrier Works) | Department of Infrastructure, Local Government and Planning (DILGP) | Operational work that is the constructing or raising of a waterway barrier (i.e. any structure that limits fish movement along a mapped waterway) | <i>Queensland waterways for waterway barrier works</i> waterways run across the Project site and will potentially be impacted by the Project. Various self-assessable codes may be applicable to the works and avoid triggering a development permit (i.e. for culverts, bed level crossings, temporary waterway barriers). |
| <i>Sustainable Planning Act 2009</i> <i>Environmental Protection Act 1994</i> | Material Change of Use of Premises for Environmentally Relevant Activity | DILGP | Making a material change of use of premises for an environmentally relevant activity that, under the Environmental Protection Regulation 2008 is identified as a concurrence ERA | The construction of a new 66 kV powerline and a new 40 km extension of the western corridor water supply pipeline off-lease. ERA 16 – Extractive and Screening Activities may apply if carrying out quarrying activities off-lease. Other ERAs may apply. |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|---|---|-----------------------------|--|---|
| <i>Sustainable Planning Act 2009</i> <i>Water Act 2000</i> | Operational Works development permit for Taking and Interfering with Water | DILGP | Taking or interfering with water from a watercourse, lake or spring or from a dam constructed on a watercourse or lake (i.e. diverting water, interfering with flow of water, weirs, taking water for construction/operational purposes, increasing capacity of water feature) | There are three watercourses as defined under the <i>Water Act 2000</i> that run through the Project site. Where compliance with the applicable exemption/self-assessable development requirements cannot be met, a development will be required. Development of off-lease works including a new 40 km western corridor water supply pipeline. BMA will consult with DNRM in relation to groundwater and surface water matters. |
| <i>Sustainable Planning Act 2009</i> <i>Vegetation Management Act 1999</i> | Operational Works (Clearing of Native Vegetation) development permit | DILGP | Clearing regulated vegetation where a clearing exemption, self-assessable codes or area management plans do not apply. Off-tenure only. | The EIS process will assess the extent of the potential impact on regulated vegetation. Approval may be avoided if the clearance of vegetation is considered as part of a material change of use development application. Only applicable where off-tenure. |
| <i>Sustainable Planning Act 2009</i> | Owner's Consent for lodgement of various applications, including Material Change of Use and work on rail corridor land development applications | Relevant owners (i.e. DNRM) | Owner's consent required for applications to be deemed 'properly made' under the <i>Sustainable Planning Act 2009</i> . | The Project will trigger a Material Change of Use development application. |
| <i>Water Act 2000</i> | Water Licence | DNRM | Taking water from a watercourse, lake, spring or aquifer for an activity which is of a temporary nature. | Dewatering ahead of mining and as part of the incidental mine gas strategy. |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|--|--|--|---|--|
| | Riverine Protection Permit | DNRM | Excavating or placing fill in a watercourse, lake or spring. | Required for Project activities on and off-lease. Construction of the water supply pipeline may require trenching across watercourses. Likely to be required for the placement of powerline and water supply infrastructure. |
| | Resource Operations Licence | DNRM | A Resource Operations Licence is required for the operation of the pipeline infrastructure. | Authorises the holder of the licence to interfere with the flow of water to the extent necessary to operate water infrastructure to which the licence applies (i.e. proposed water pipeline). |
| <i>Regional Planning Interests Act 2014</i> | Regional Interests Development Approval (RIDA) | DILGP | A RIDA is required where a resource activity is proposed to be located in an area of regional interest. | The proposed infrastructure corridor encroaches within a Strategic Cropping Area (SCA), which is an area of regional interest. A resource activity is defined under Section 12 of the RPI Act and includes: an activity for which a resource authority is required or an activity that is authorised under a resource authority or proposed resource authority |
| <i>Aboriginal Cultural Heritage Act 2003</i> | CHMP and Duty of Care Statement | Aboriginal Party and Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) | Works that have potential to interfere with places, artefacts and landscapes of Aboriginal heritage or spiritual culture. | Applicable to vegetation clearance and earthworks within the Project site. The EIS and CHMP process will assess the occurrence of and extent of the potential impact under the <i>Aboriginal Cultural Heritage Act 2003</i> . |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|--|---|-------------------------|---|--|
| <i>Nature Conservation Act 1992</i> and the Nature Conservation (Wildlife) Regulation 1994 | Clearing Permit (Protected Plants) | EHP | Clearance of threatened plants listed under NC Act. | <p>The Project site is not located within a high risk area as per the NC Act flora survey trigger map. When works are proposed in an area other than a high risk area, a clearing permit is only required where a person is, or becomes, aware that EVNT plants are present.</p> <p>If EVNT flora species are located on-site during construction, a permit for clearing the plants will be required unless clearing of the plants (and clearing within 100m of the plant) can be avoided.</p> <p>Clearing of least concern plants are exempt from requiring a clearing permit within a low risk area.</p> |
| Nature Conservation (Wildlife) Regulation 2006 | A Species Management Plan or Damage Mitigation Permit required to lawfully tamper with an animal breeding place | EHP | Tampering with an animal breeding place that that is being used by a protected animal to incubate or rear the animal's offspring. | <p>Required for vegetation clearance and earthworks associated with the Project.</p> <p>The removal or tampering of a breeding place is allowed if it is part of a species management program for the same species or if a 'damage mitigation permit' for the animal is obtained and the permit authorises the removal or tampering.</p> |
| <i>Nature Conservation Act 1992</i> | Approval to take native wildlife (removal of wildlife) | EHP | A person must not take a protected animal unless the person is an authorised person or the taking is authorised under this Act. | <p>Protected animals are likely to be encountered in the establishment of the Project.</p> <p>A fauna spotter/catcher with a current rehabilitation permit must be engaged prior to vegetation clearance.</p> |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|--|---|--|--|--|
| <i>Land Title Act 1994</i> | Easements | DNRM | Landowner compensation arrangements, survey and easement registration. | The new water supply pipeline and 66 kV powerline may require landowner compensation arrangements and easement registration for off-lease components. |
| | Permit to occupy | DNRM, IRC | A permit to occupy will be required when locating infrastructure in unallocated State land, reserves and roads | The new water supply pipeline and 66 kV powerline may require permits with IRC for crossings of Dysart-Moranbah Road. |
| <i>Transport Infrastructure Act 1994</i> | Wayleave agreement or Sub-lease and/or Railway Manager agreement with Aurizon | Aurizon | Crossing railway corridor land and establishment of new rail spur | The new water supply pipeline and 66 kV powerline may require agreements with Aurizon for crossing existing rail easements. |
| <i>Forestry Act 1959</i> | Sales Permit | DNRM/Department of Agriculture and Fisheries (DAF) | Taking quarry material which is vested with the Crown. | Once quarry locations are determined, BMA will liaise with DNRM/DAF Forest Products to determine who 'owns' the material (e.g. the Crown or private landholder). If any material required for the Project is owned by the Crown, BMA will require this approval. |

| Legislation | Approval | Administering Authority | Approval trigger | Relevance to the Project |
|---------------------------------------|--|--|---|--|
| <i>Electricity Act 1994</i> | Electricity generation authority or Electricity distribution authority | Electricity generation authority or Electricity distribution authority | A generation authority is required to connect a generating plant to a transmission grid or supply network. However, the authority is not required if a third party will be carrying out the activity of operating the generating plant. A distribution authority will be required if an internal distribution network is constructed and operated. The authority is not required if a third party will be carrying out the activity of operating the distribution network. | Application may be required if external power supplies are sought in the future for the mine |
| <i>Electricity Act 1994</i> | Notification of work affecting electricity entities works. | Powerlink | Where the Project would interfere with electricity entities works, then notice is required to be given. | The Project will involve the connection of a new 66 kV powerline. |
| <i>Local Government Act 2009</i> | Various permits under Local Laws (i.e. Road excavation, road closure, local vegetation clearing permits) | IRC | Carrying out activities regulated under the local government local laws. | The local laws typically regulate but are not restricted to works on local roads, traffic, pest management and vegetation. |
| <i>Plumbing and Drainage Act 2002</i> | Approval for on-site sewerage treatment plant | Department of Housing and Public Works | This approval is required for any on-site sewerage treatment plant | This approval will be required regardless of whether the sewerage treatment plant is an environmentally relevant activity under the Environmental Protection Act 1994. |

6 Contact details

For further information concerning the Project, please contact:

Project Information Line

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