



BHP Billiton Mitsubishi Alliance

Daunia Coal Mine Project

Environmental Impact Statement

November 2008

Executive Summary



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Executive Summary

Introduction

The Proponent, BHP Billiton Mitsubishi Alliance Coal Operations Pty Ltd (BMA), has prepared this Environmental Impact Statement (EIS) to assess the environmental, social and economic impacts associated with the development of a multi-seam open cut coal mine at Daunia, approximately 25 km south-east of Moranbah and approximately 170 km south-west of Mackay, Queensland (the Project). The Project forms part of the BMA Bowen Basin Coal Growth Project (BMA BBCGP) which includes 3 other projects that will be addressed by separate EIS's. The Project's location is shown on **Figure 1**.

The Project includes a new coal mine and coal handling and processing infrastructure to produce 4 Million tonnes per annum (Mt/a) of semi hard coking coal and pulverized coal injection (PCI) coal for the export market over a life of approximately 21 years.

The Project's mining areas are located on the granted Daunia Mining Lease (ML 1781) and Daunia East Mining Lease (ML 70115). The Project's infrastructure areas will be constructed predominantly on the granted Red Mountain Mining Lease (ML 70116) and minor components on the granted Millennium Mining Lease (ML 70312) (train load out) and Poitrel Mining Lease (ML 4749). The Project's layout is shown on **Figure 2**.

The key benefits from the Project will include:

- a total of 450 construction jobs and 300 operational job opportunities (including contractors), along with the flow-on (indirect) employment opportunities;
- significant export income;
- injection of revenue into the regional economy;
- significant State and Commonwealth Government taxes and royalties generated; and
- the economic opportunity of developing a coal resource which is viable and in demand.

The EIS studies have examined all aspects of the Project and how activities may impact on the social and biological environment in accordance with the Terms of Reference for the BMA Bowen Basin Coal Growth Project.

The EIS studies consistently found that the Project Site's existing environment has relatively low environmental value. The Project Site is highly degraded from extensive clearing of native vegetation, cattle grazing and weed invasion.

There is also only 1 homestead (sensitive receiver) within 3 km of the Project Site. Hence, activities with the potential to generate nuisance impacts (noise and dust) can be managed with the control strategies proposed.

Consultation with the community and stakeholders did not highlight any major issues of concern at the Project Site. However, while the social impact assessment found that the Project, in isolation, is unlikely to have a significant impact on communities, the Project will add to the existing social issues, including the lack of affordable housing in Moranbah. BMA understands the role they need to play in developing collaborative solutions with government and industry. This EIS outlines a number of control strategies that BMA will implement to address these socio-economic issues. It is important to note that this EIS assesses the first of



4 projects that comprise the BMA BBCGP. The EISs prepared for the remaining 3 projects will continue to examine and report on these local and regional issues.

Overall the EIS studies have found that the Daunia Project benefits provide a strong justification for the Project to proceed when weighed against the impacts that will be managed through control strategies.

Further summaries of the Project and key studies are provided in the following pages of this Executive Summary.

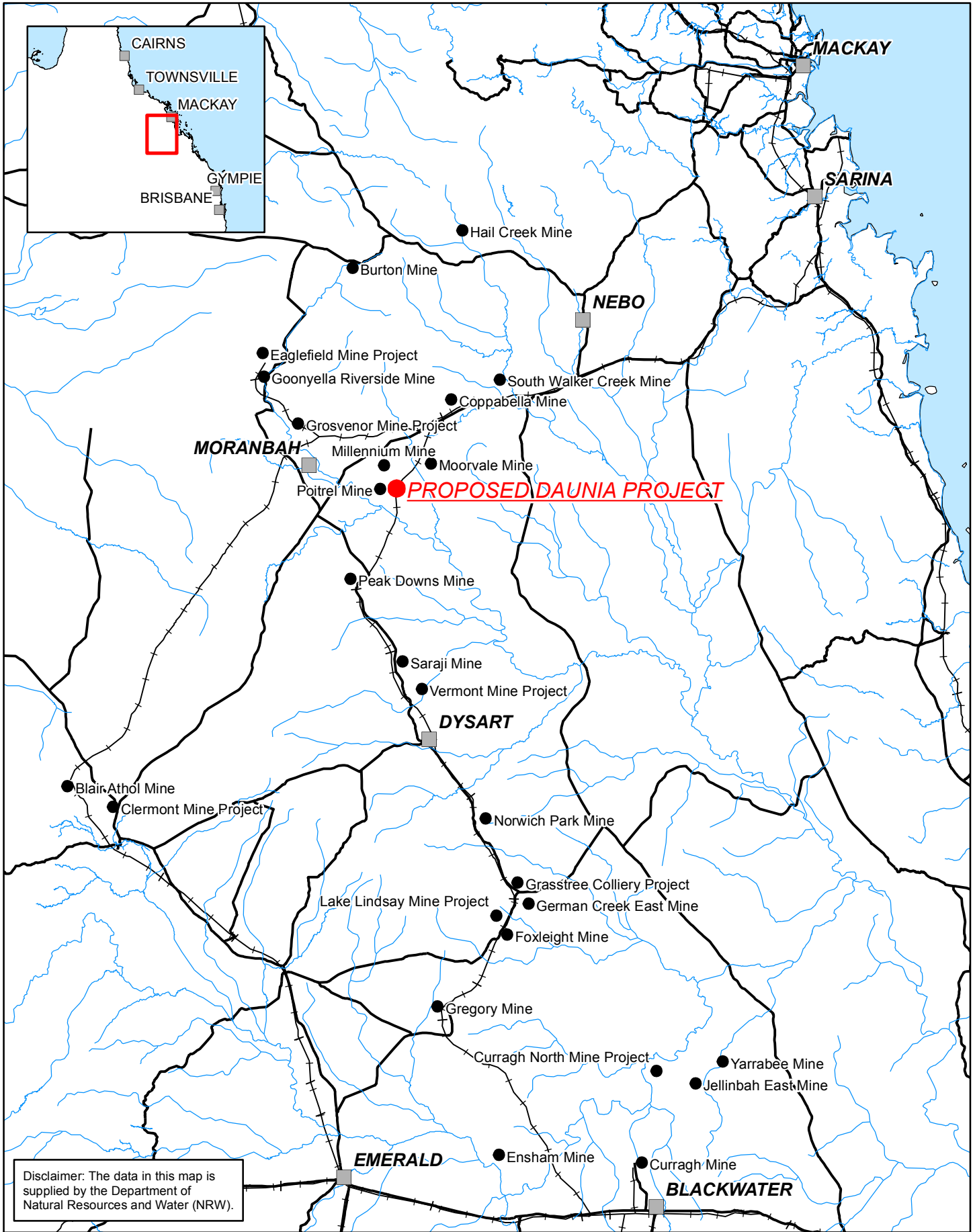
Project Overview

The key elements of the Project are listed below.

- An open cut coal mine will be constructed on the granted Daunia Mining Lease (ML) 1781 generating 5.6 Mt/a of run-of-mine (ROM) coal to produce 4 Mt/a of product coal for the export market.
- The product coal will be railed to the Hay Point and Dalrymple Bay coal terminals for distribution to international markets.
- Out of pit spoil dumps will be created on the granted Daunia East Mining Lease (ML 70115) and Daunia Mining Lease (ML 1781). Pits will be progressively backfilled once there is sufficient space.
- A mine water management system will be constructed that diverts clean water, captures and manages mine area runoff and pit water for reuse.
- A new Coal Handling and Preparation Plant (CHPP) will be constructed on the granted Red Mountain Mining Lease (ML 70116).
- Mine haul roads and an overpass across the Norwich Park Branch railway line will connect mining areas to the new CHPP.
- A conveyor will be constructed to transfer product coal from the CHPP to the train load out located on the granted Millennium Mining Lease (ML 70312).
- Power will be supplied via an overhead 66 kilovolt (kV) transmission line from the Millennium switchyard to a proposed Daunia switchyard. An 11 kV electrical system will deliver power to the CHPP.
- Process waste comprising both rejects and dewatered tailings from the CHPP will be returned by truck and disposed of in the Project's spoil dumps.
- Process water will be supplied using a combination of reuse from sediment dams and the Process Water Dam (existing Poitrel Mine infrastructure), which is supplied from the Braeside water pipeline.
- The Project will be accessed via the existing road into the Millennium and Poitrel Mines off the Peak Downs Highway and may also be accessed via Daunia Road during construction.
- The rail track to the Red Mountain rail loop will be upgraded to at least 12 Mt/a capacity.
- The Project will share some services with the Poitrel Mine, including: site offices, workshops, stores, magazine, communications, sewage treatment, roads, car parking and some other minor facilities.

The Proponent

The Project proponent is BHP Billiton Mitsubishi Alliance Coal Operations Pty Ltd (BMA) as manager and agent on behalf of the Central Queensland Coal Associates Joint Venture (CQCA). CQCA is an unincorporated joint venture between BHP Billiton (50%) and Mitsubishi Corp. (50%). Joint venture arrangements are regulated in accordance with the CQCA Joint Venture. Operations are managed by BMA on behalf of the CQCA Joint Venturers.



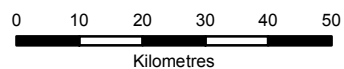
Disclaimer: The data in this map is supplied by the Department of Natural Resources and Water (NRW).

LEGEND

- Mines
- Towns
- + Railway
- Drainage
- Main Road



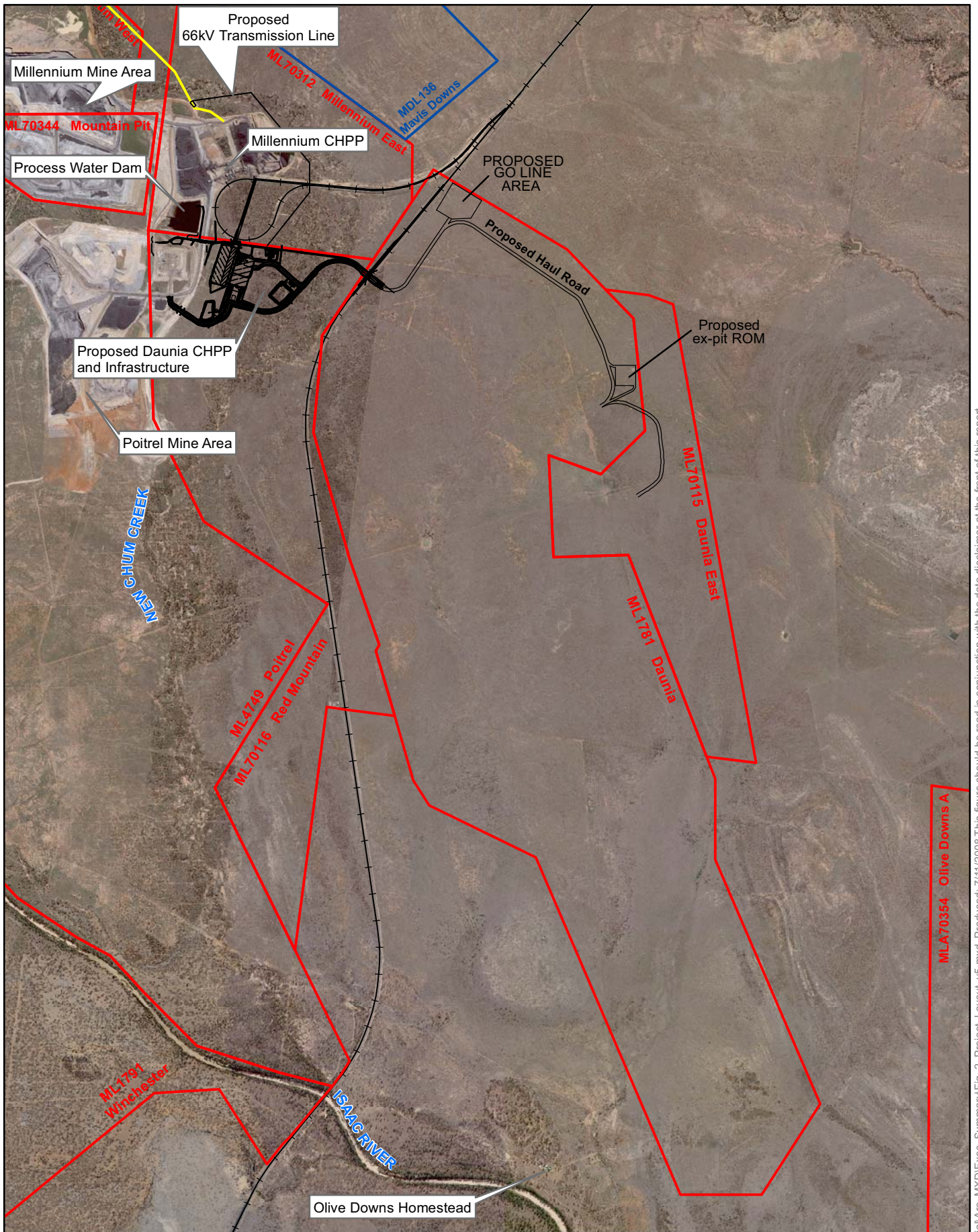
FIGURE 1
DAUNIA COAL MINE EIS
 PROJECT LOCATION



Scale 1:1,200,000 on A4
 Projection: Australian Map Grid - Zone 55 (AGD84)



BHP Billiton Mitsubishi Alliance

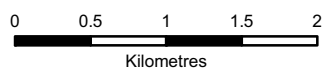


LEGEND

- +— Existing Railway
- Proposed Mine Infrastructure
- Existing 66kV Transmission Line
- ▭ Mining Lease
- ▭ Mineral Development Licence



FIGURE 2
DAUNIA COAL MINE EIS
PROJECT LAYOUT



Scale 1:50,000 on A4

Projection: Australian Map Grid - Zone 55 (AGD84)





BMA has equal ownership and management of seven Central Queensland coal mines: Goonyella Riverside, Broadmeadow, Peak Downs, Saraji, Norwich Park, Gregory Crinum and Blackwater, and also manages the Hay Point coal terminal near Mackay, Queensland. In addition, BMA manages the operations of BHP Mitsui Coal, which is owned by BHP Billiton (80%) and Mitsui and Co (20%). These operations include the South Walker Creek Mine and Poitrel Mine, which is immediately west of the Daunia Mine.

Project Need

Australia is the world's largest exporter of coal and Queensland is responsible for about two thirds of exported coal. Coal is the state's most important export commodity, earning Australia around \$10 billion. In the financial year ending 30 June 2008, coal contributed \$1.04 billion in royalties to the State Government. Based on changes to royalties announced in the Queensland State Budget 2008-09, royalties from coal are projected to rise to over \$3.21 billion in 2008-09. The industry is also a mainstay of rail and port services in Central Queensland.

The Project's high quality, low sulphur, semi hard coking coal and PCI coals are attractive to overseas buyers. The Project forms part of a growth strategy designed to strategically service the expanding demands of India, China and other international metallurgical coal markets.

The coal industry in Queensland employs about 20,000 people directly. A further 70,000 indirect jobs are created through the industry's activities. At full production, the Project will directly employ approximately 300 people, with many more employed indirectly as a result of flow-on effects.

An initial capital investment of approximately USD \$500 million will be required to bring the Project to full production. Operational expenditure will be about AUD \$200 to 250 million per annum for the 21 year mine life. The operation will contribute significantly to the State in rail freight and royalties. This contribution coupled with the direct and indirect employment opportunities and associated spending, highlights the value of the Project to Queensland.

Stakeholders and Consultation

Consultation was undertaken as part of the EIS study process and included:

- Newsletters to Moranbah residents;
- Advertising and media releases;
- Employee communications;
- Factsheets;
- BMA growth website;
- Static displays;
- Mobile displays in Moranbah, Nebo and Mackay;
- Key stakeholder briefings;
- Council meetings;
- Community reference group meetings;
- Affected property owner discussions;
- One to one meetings with affected property owners; and
- Community contact points (free call information line and enquiry email address).



Groups and individuals identified as stakeholders in this Project included;

- Local communities (Moranbah/Coppabella/Nebo/Dysart);
- Land owners;
- Non government organisations;
- The Barada / Barna / Kabelbara / Yetimarala (BBKY) Aboriginal people;
- State and local government agencies and elected representatives;
- Unions;
- Media;
- Potential employees;
- Infrastructure providers;
- Customers and suppliers; and
- Other mining companies.

The community's reaction to BMA's engagement process was generally positive and participants showed interest in the Project and BMA's overall growth. Community members also emphasised the importance of their input in planning for further mine development and managing potential impacts. The key issues and concerns raised included:

- Accommodation options and locations;
- Environmental issues such as noise, dust and vibration;
- BMA's contribution to Moranbah lifestyles and community values;
- Where BMA would source employees from;
- Employment opportunities;
- Pressures on social services and facilities including emergency and health services;
- Impacts on local roads;
- EIS timeframes and processes;
- Climate change;
- Impacts on regional ecosystems and water; and
- Mine rehabilitation.

Approval Process

On 4 July 2008 the Coordinator-General declared the BMA Bowen Basin Coal Growth Project (BMA BBCGP) a "significant project" for which an Environmental Impact Statement is required. This EIS addresses the Terms of Reference for the BMA BBCGP for the Daunia Project, which is the first project of the BMA BBCGP.

The DIP will be responsible for coordinating the EIS assessment process, and at the end of the process the Coordinator-General will report on the process and the Project's environmental acceptability.

The Commonwealth Minister for the Environment has determined that the Project constitutes a 'controlled action' under the *Environmental Protection and Biodiversity Conservation Act 1999*. The EIS process will also serve to address the matters of 'national environmental significance' identified by Minister.



Following the EIS approvals, additional approvals will be sought for the operation including an Environmental Authority under the *Environmental Protection Act 1994*.

Environmental Management

Land Resources

The current land use on the Project mining areas is grazing. Surrounding land uses include grazing and coal mining.

The post-mine land use for areas disturbed by the Project will be a mosaic of self sustaining vegetation communities and grazing land using appropriate native tree, shrub and grass species, and improved pasture species as appropriate.

The soils of the Project Site are mostly uniform Brigalow clays with quite coarse structured subsoils. The Project will remove 240 ha of Class A and B Good Quality Agricultural Land (GQAL) as well as some Class C GQAL. However, this is acceptable under State Planning Policy 1/92 as the Project represents an overriding benefit to the community. The Project will also reduce the pre-mined land use suitability of the site for grazing and cropping.

None of the affected land is currently registered as contaminated land on the Contaminated Land Register or the Environmental Management Register. Contamination from Project activities is also considered a low risk. This includes risks associated with acid mine drainage, where characterisation studies have found a low risk of acid generation and runoff from mineral wastes.

Mineral Waste

Geochemical analysis was undertaken of approximately 200 samples taken from 20 drill holes across the Project mining area. The geochemical analysis indicated that the overburden and interburden materials will pose a very low risk of Acid Mine Drainage, with only 2 out of 200 samples having a significant net acid producing potential. The coal tailings generated by the CHPP are likely to have a higher acid producing potential, however, their acid neutralising capacity is also expected to be significant. Acid Mine Drainage from the tailings is thus expected to be manageable through provision of sufficient cover (at least 5 m) over the tailings.

Monitoring will be undertaken regularly during operations to determine the acid producing potential of overburden, interburden and tailings materials and to guide management of the materials as required to mitigate Acid Mine Drainage.

The geochemical analysis indicated that the overburden and interburden materials are mostly sodic and are unlikely to be suitable for rehabilitation without treatment or topsoil. The geochemical analysis also indicated that the levels of metals within the overburden and interburden materials are mostly within criteria set for phytotoxicity and human health, with a few exceptions that can be managed through appropriate placement and covering.

Surface Water

The Project infrastructure areas are drained by New Chum Creek which flows into the Isaac River. The Project mining areas are drained by two unnamed drainage paths that also flow into the Isaac River. The Isaac River and New Chum Creek are both ephemeral waterways that ultimately drain to the Fitzroy River.

The water in the Isaac River and New Chum Creek is generally suitable for irrigation and stock water use. The pH is generally alkaline; electrical conductivity, total dissolved solids, total suspended solids and turbidity can be very high at times; and the concentration of metals in these systems is usually low.

Two surface water extraction licences exist on the Isaac River in reasonable proximity to the Project. There are none on New Chum Creek. The mining areas of the Project Site represent 0.7 per cent of the Isaac River catchment upstream of the Project Site, therefore the Project will have a very marginal affect on flows into the River and thus a negligible impact on water extraction licenses in the vicinity.

Management of the rainfall runoff on site will require a series of diversion drains and sediment dams integrated with the Process Water Dam that exists at the Poitrel operation.

There is limited existing inundation of the Project Site due to the 100 year Annual Recurrence Interval (ARI) flood event, with flooding restricted to the vicinity of New Chum Creek and to the southern extents of the two un-named drainage paths that traverse the mining area. The flooding within the Project Site is due to capacity limitations in these waterways rather than through flooding from the Isaac River.

The Project involves a proposed haul road crossing of New Chum Creek on the Red Mountain Mining Lease, which is predicted to increase flood levels upstream of the crossing. The increased flood levels are expected to extend up to 400 m north of the Project Site's boundary, into the adjacent Millennium Mining Lease.

There will be little risk of water discharges occurring from the site to New Chum Creek or the Isaac River. Uncontrolled discharges from sediment dams may occur in an emergency or when a rainfall event exceeds the 10 year ARI, 24 hour design criteria. To minimise uncontrolled discharges a controlled release strategy will be developed that maximises water use on site. Controlled discharges will be managed by meeting quality requirements and only discharging during times of natural flow.

Water quality downstream of the Project Site will be maintained similar to its existing condition. A water quality monitoring program will be established from commencement of the Project to determine compliance with the conditions of the environmental authority.

Groundwater

Two distinct aquifers occur beneath the Project Site. These are the Quaternary age alluvium; and the Permian to Triassic age fractured rocks. The alluvium deposits are generally less than 20 m in thickness and are present in the southern part of the Project Site in association with the Isaac River. The Permian to Triassic Rewan Group and Rangal Coal Measures underlie the Quaternary age alluvium, with limited outcrops within the Project Site as they generally weather rapidly to form a layer of clayey soils. The Rewan Group and Rangal Coal Measures consist of sandstone, siltstone, mudstone, shale and coal. In general, the Rewan Group and Rangal Coal Measures do not yield large volumes of groundwater, with the exception of the coal seams that have a relatively higher permeability.

A total of fifteen groundwater bores (of which at least nine are currently active) were identified within a twenty km radius of the boundary of the Project Site. In general, the bores are owned by surrounding landholders and used for stock purposes.

The Total Dissolved Solids (TDS) concentration in groundwater ranges from 4,360 – 8,190 mg/L and pH from 6.5 – 6.7. Compared with the Aquatic Ecosystem guideline levels, salinity, arsenic, chromium, copper,

manganese and zinc are elevated in the groundwater. The chloride, sodium, iron and manganese concentrations frequently exceed irrigation guideline values. The salinity of the groundwater would generally limit its use for stock watering, without significant dilution by fresh water; and would also preclude its use for drinking water, for which the Australian salinity guideline is less than 500 mg/L TDS.

The Project will operate in the vicinity of the existing Poitrel Mine and Millennium Project and thus the EIS has assessed the cumulative impacts of the three mines on surrounding groundwater levels. Numerical modelling was undertaken to determine the extent of drawdown during and after the Project's operation. As a consequence of groundwater discharge to the three mines' pits during mining, the regional groundwater levels will lower or drawdown. At year 20 of the Project's operation, it is predicted that a groundwater drawdown in the Rangal Coal Measures of up to 2 m will extend out to a distance of approximately 4.5 km to the east, 10 km to the west, 2 km to the south and 4 km to the north of the Project Site. The groundwater drawdown in the overlying Quaternary age alluvium is predicted to be less due to the low conductivity of the fractured rock that lies between the alluvium and the coal seams within the Rangal Coal Measures.

A total of 4 neighbouring bore holes (3 of which are active) are predicted to experience drawdown greater than 2 m. The mining and de-watering operations are not expected to have a detrimental impact to the groundwater quality as water will always flow towards the pit. Geochemical analysis undertaken at the Project Site indicates a very low risk of Acid Mine Drainage. The aquifers surrounding the pit will continue to receive recharge via the same process that occurred pre-mining.

BMA will seek to reach mutually agreeable arrangements with affected neighbouring groundwater users for the provision of alternative supplies throughout the mine life, and after mine closure. Alternative supplies will be put in place before supplies from relevant existing landholder bores are adversely affected. An ongoing groundwater monitoring program will be developed based on the groundwater modelling results and underlying geology.

Following cessation of mining, a rehabilitated final void will remain and groundwater will continue to discharge to the void, with water levels within the surrounding aquifers eventually recovering to a new equilibrium. The rehabilitated final void will have a limited surface catchment and, without flooding inflows, will never overflow to the downstream environment.

Terrestrial Flora and Fauna

The terrestrial ecology of the Project Site is highly degraded. The key factors contributing to this have been stress from the prolonged drought, high levels of grazing over a long period and extensive invasion by Buffel Grass.

Remnant vegetation on the Project Site is concentrated along the north-western boundary of the Daunia Mining Lease. The Project's mining footprint has been re-configured to minimise clearing of this remnant vegetation. Areas of regrowth vegetation are scattered thinly across the Project Site as several relatively small fragments of vegetation, occurring along fence lines and in grazing paddocks. These fragments are little more than scattered trees.

The vegetation of the Project Site comprises 7 mapped remnant vegetation types. Four of these are considered representative of '*endangered*' ecological communities under the provisions of *Environment Protection and Biodiversity Conservation Act 1999* and three are considered representative of endangered

regional ecosystems under the *Vegetation Management Act 1999* (VM Act) and a further one is classified as 'of concern' under the VM Act.

No rare or threatened flora species have been recorded from the Project Site.

Two matters of National Environmental Significance (NES) are known on the Project Site: the Brigalow Endangered Ecological Community (EEC) and the vulnerable Squatter Pigeon. The Project will require only limited clearing of the Brigalow EEC, and there is limited suitable habitat on the Project Site for the Squatter Pigeon, although it may occur in conjunction with remnant vegetation associated with New Chum Creek. Impacts on the Squatter Pigeon as a result of the Project are considered unlikely to be significant, and the species may benefit by the Project's vegetation restoration works.

Three species considered to be rare in Queensland have been recorded from the wider locality (Collet's snake, Little Pied Bat and Black-chinned Honeyeater). None of these species are provided with essential habitat factors on the Project mining areas. Limited areas of suitable habitat may be disturbed due to infrastructure development on the Project infrastructure areas.

All practical measures available will be implemented to reduce the amount of unnecessary clearing and preservation of remaining native vegetation, with particular emphasis on the vegetation types of significance.

A number of weeds of management concern were identified as part of the flora surveys. One of these species, Parthenium, is also listed as a Weed of National Significance (WONS).

Aquatic Flora and Fauna

No threatened or endangered aquatic flora or fauna (macroinvertebrate, turtles, fish and platypus) were identified inhabiting the waterways within the Project Site or the surrounding water courses. No species or habitat was found showing any special significance in terms of aquatic flora or fauna. The likelihood that rare or threatened species are occupying the Project Site is considered very low.

The two unnamed drainage paths that traverse the Project mining area are ephemeral waterways and are headwaters. The aquatic habitat of these waterways is of low quality due to the previous land use, which included clearing of riparian vegetation and unrestricted access by livestock. The aquatic habitat in the Project Site, although poor and ephemeral in nature, provides temporary habitat for a number of native aquatic species including fish. The fish assemblage is representative of an ephemeral environment within the Isaac River. Continuation of the current water quality in the Isaac River will ensure the presence of these species in both the Isaac River, New Chum Creek and its tributaries.

Air Quality

Dust from the Project is considered the primary potential air contaminant. Gaseous emissions such as sulphur dioxide and oxides of nitrogen are not considered relevant owing to their very low levels of emission. Contributors to particulate emissions from the surrounding environment include agricultural activities (in particular dust from cultivated areas), smoke, and other coal mines in the region.

Numerical modelling undertaken as part of the EIS indicates that no degradation of air quality will occur at any nearby sensitive receivers, however deposited dust has the potential to generate some nuisance impacts at Olive Downs late in the Project life. Ongoing dust deposition monitoring will be undertaken to detect if the Project is generating potential nuisance impacts. Mitigation measures will be implemented to

reduce the potential for air quality impacts at nearest sensitive receivers. A complaints register for dust impacts will be maintained. Should any complaints be registered, management strategies will be developed in accordance with the *Environmental Protection (Air) Policy 1997*.

Noise and Vibration

The Project has the potential to generate noise and vibration impacts on nearby sensitive receivers. Activities at the Project vary in location and nature throughout the Project life. Therefore noise levels at sensitive receivers will also vary throughout the Project life. Depending on the stage of the Project, mining activities will be located between 1.3 to 4.6 km from the three nearest sensitive receivers.

Background noise levels measured at the three nearest sensitive receivers revealed an existing noise environment typical of a rural area. Primary noise sources include rustling leaves, insects, birds and livestock, as well as localised vehicle and machinery noise.

Numerical modelling undertaken for the EIS indicates that the Project's construction and operation will not exceed the noise level objectives given in the *Environmental Protection (Noise) Policy 1997* or EPA Guidelines, with the exception of the Olive Downs Homestead from years 15 to 20 of operations. Mitigation measures are outlined in the EIS to minimise the impacts on this sensitive receiver.

Nearby residents will be warned when any planned atypical noise is likely to occur. A complaints register will be established and any complaints will be logged, following which any necessary mitigation measures will be developed and implemented.

The modelling also indicates that management of charge masses will be sufficient to prevent airblast overpressure and vibration from exceeding the EPA guideline for Noise and Vibration from Blasting (2006), with the exception of Olive Downs. At Olive Downs, a combination of reduced charge masses and other blast controls (i.e. to stemming, height, type and adequate burden) will be needed to ensure compliance with the EPA guideline when mining encroaches within 1.5km of this receiver between years 15 to 20 of operations. With monitoring and management of charge masses, vibration levels at Daunia Station and Mavis Downs are likely to be well within the EPA guideline. Vibration levels at Olive Downs are also estimated to be within the EPA guideline, even when the nearest mining reserve blocks are about 1.5 km from the homestead.

Native Title and Cultural Heritage

The Project lies within an area over which the Barada / Barna / Kabelbara / Yetimarala (BBKY) People hold a registered Native Title Claim that covers all claimable land on the Project Site.

The archaeological survey carried out by the BBKY group on the Project Site found a number of artefacts including scrapers of many kinds (core, pebble, convex, side, end, nosed, notched) points, blades, several bifacial axes, numerous cores and waste flakes. The cultural materials were identified in association with gullies, drainage lines and the cleared areas, in highly disturbed locations, particularly in rills beside cleared tracks. The finds made during the field surveys were few in number. There is a marked contrast between the Project Site and the neighbouring Poitrel Mine, where in excess of 16,000 artefacts have now been salvaged from the area, mainly west of New Chum Creek.

Consultation with Senior Traditional Owner representatives has indicated that the Project Site has a limited cultural significance compared to that of New Chum Creek to the west.



BMA will implement a CHMP and meet duty of care standards set by the *Aboriginal Cultural Heritage Act 2003*. BMA also commits to engaging with the endorsed Aboriginal parties to compile a comprehensive schedule of the cultural heritage places and values of the Project Site. BMA will then negotiate a strategy to manage those places and values in a culturally appropriate fashion in the context of the Project.

The region has been devoted to pastoralism from the earliest days of European arrival about 140 years ago, and this continues to be the case with the entire Project Site devoted to the grazing of cattle. The main European Cultural Heritage item of significance is a gravestone that lies about 1 km east of Olive Downs homestead and several hundred metres south of an old stock route that runs in a north-easterly/south westerly direction. As an historic artefact the grave is protected under the provisions of *Queensland Heritage Act*. As a grave, it is also protected under the provisions of *The Coroner's Act 2003*.

Scenic Values

Due to the topography and the vegetation that exists on surrounding properties and the Project Site, the visual impact from the Project is low. Under the current circumstances, Olive Downs Homestead is the only sensitive receiver likely to be impacted visually, with other sites obstructed by the remnant vegetation and topography of the land. Only motorists travelling along the access road beside the railway line will have a clear and close-up view of the Project Site. This road is only accessed by the residents of Olive Downs, mine and railway workers. The Poitrel and Millennium mining operations are already visible along this road. Views from along the Peak Downs Highway and Daunia Road are obstructed by vegetation and topography.

Waste Management

The major sources of general and regulated waste from the Project are:

- regulated waste such as hydrocarbon waste, detergents, solvents, batteries and tyres;
- general waste such as food scraps, paper, rags, cans and glass; and
- scrap metal.

Colour-coded, signed bins will be used to segregate and collect food wastes, paper and recyclables. The bins will be located throughout the Project Site to achieve maximum economic waste recovery. General wastes will be transported for disposal to the Nebo or Moranbah landfill. Regulated wastes will be taken off-site by licensed regulated waste transporter, and disposed off-site by a regulated waste receiver.

Traffic and Infrastructure

Access to the site will be via the existing Peak Downs Highway and the Millennium Project Access Road. The Project does not require the relocation of any road or other infrastructure. The minor increase in traffic generated by the Project will not affect the 'Level of Service' experienced by drivers on the Peak Downs Highway, nor have an impact on the local traffic infrastructure.

Additional train movements will occur along the Goonyella Rail System. However, this is within the capacity of this system.

Social Aspects

The Project in isolation is unlikely to have a significant impact on the local or regional communities. It is not envisaged that the Project will create new issues within the local or regional communities but instead will add to the issues already faced by these communities.

The concern for community members is the changes that could occur to the local area as a result of continued mining development and expansion in the region. The existing housing crisis in the area is acting as a catalyst for other issues. The lack of affordable housing is restricting the movement of new families into the area. It is also putting additional financial pressure on lower and middle income earners, forcing many to move out of the area in the search for more affordable accommodation. This in turn is reducing the pool of available labour within the community for other positions such as cleaners, retail assistance and council operators..

Community members have expressed concerns about the longer-term impacts of this on the township of Moranbah. They are concerned that if the housing crisis is not addressed and more affordable housing made available, the continuing trend of mining companies to house their workforce in village-style accommodation will result in changes to the current residential approach of Moranbah. While BMA is not in a position to address this housing crisis in isolation, they have a role to play in developing a collaborative solution with federal, state and local government, community housing providers and industry.

Economics

The closest significant economic activity to the Project is at the township of Moranbah, located about 25 km to the north-west of the Project Site. Employment in mining dominates the local economy.

The Project will have a substantial impact on the economic environment. These impacts would be felt locally, and would also have large flow-on effects throughout the Mackay region and State-wide. The annual economic impact on the Mackay Region during the Project's life is estimated to provide up to \$70 million in Value Added. The Project will generate an additional 339 to 456 jobs in the Mackay Region and 313 to 418 jobs in Australia annually.

Key issues identified by the former Nebo Shire Council to ensure sustainable economic growth in the future include:

- access to adequate/available water resources;
- youth retention and development;
- infrastructure – hard, soft, social;
- the need to diversify to reduce dependency levels on coal mining; and
- availability of land and housing developments.

These key issues are also applicable to the former Belyando and Broadsound Shires. In order to support the Isaac Regional Council in addressing the above key issues BMA has implemented the following programs:

- Provided financial support to the former Belyando, Broadsound and Nebo Shire Councils to employ a Hinterland Economic Development Manager. The purpose of this Economic Development Manager is to promote the region to potential residents and tourists as well as establishing an environment that will attract and retain small business and industry.
- Constructed the Burdekin Pipeline which provides water to the township of Moranbah. The former Belyando Shire Council has been offered 7 ML per day, annually adjusted on population base. This will provide 800 litres for consumption per person per day in Moranbah (in comparison Brisbane City Council expects to provide 140 litres per person per day). Mining and industry have contributed 87 per cent of



the costs of the pipeline with 8 per cent contributed to by the former Belyando Shire Council and 5 per cent by the Queensland Government.

- Established the BMA Community Partnership Program, which provides \$1 million per annum to the Bowen Basin region. The initiatives of this program include:
 - youth development;
 - economic development/business and skills training;
 - community development and welfare;
 - community, safety sport, wellbeing and recreation;
 - arts, entertainment and cultural development; and
 - environment and sustainable development.
- Provided approximately \$16 million to the council in the form of rates, subsidies, special levies and allocations.

BMA will continue to implement and evolve its Community Partnerships Program throughout the Bowen Basin. An avenue for the implementation and monitoring of any economic initiatives will be through the established “Growing BMA” Community Reference Group. This group includes representatives from government agencies, social service providers and business development groups.

Health and Safety

The hazards and risks associated with the Project have been identified through the use of a Preliminary Hazard Analysis (PHA), which assisted in the identification of potential incident scenarios, potential consequences, prevention, protection and mitigation measures.

The Project is generally “Low” or “Moderate” risk with the exception of safety risks from highwall rock fall, contact with high voltage electricity and blasting, which have been assessed as “High” risk. These risks are common to all open cut mining operations and are subject to the controls contained in the *Coal Mining Safety and Health Regulations 2001*.

The Project will adopt a safety management system similar to those presently implemented throughout other BMA managed operations. The system will adopt an integrated approach to risk management of the operations, recognising the hazards at all points in the operations and how these are controlled.

Environmental Management and Monitoring

Project operations will take place under a certified ISO 14001 Environmental Management System.

Environmental monitoring will occur in accordance with the requirements of the Environmental Authority. The environmental monitoring will include rehabilitation success, surface water quality, groundwater quality and level, dust deposition and noise.