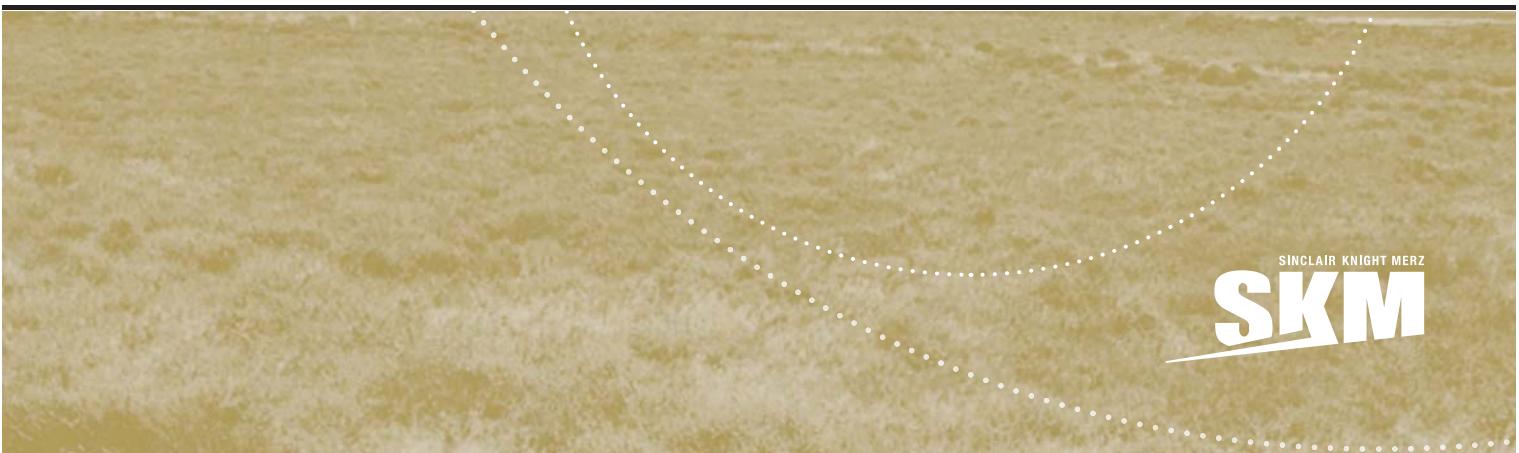




Executive Summary





Introduction

New Acland Coal Pty Ltd (NAC) currently operates the existing New Acland coal mine (the Mine), a 4.2 million tonnes (product coal) per annum (Mtpa) open cut coal mine on mining lease (ML) ML 50170 and ML 50216 within Mineral Development Licence (MDL) MDL 244, under the approval of Environmental Authority (EA) No. MIM800317705. The Mine has recently received approval from the Department of Environment and Resource Management (DERM) to mine up to 4.8 Mtpa of product coal through the amendment process outlined under the *Environmental Protection Act 1994* (EP Act).

The proposal involves the staged expansion of the Mine up to a capacity of 10 Mtpa of product coal through the inclusion and progressive development of three new resource areas within MLA 50232 (the Project). The Project is expected to extend coal production at the Mine until approximately 2042. The Project's location is shown on **Figure 1**.

The Proponent

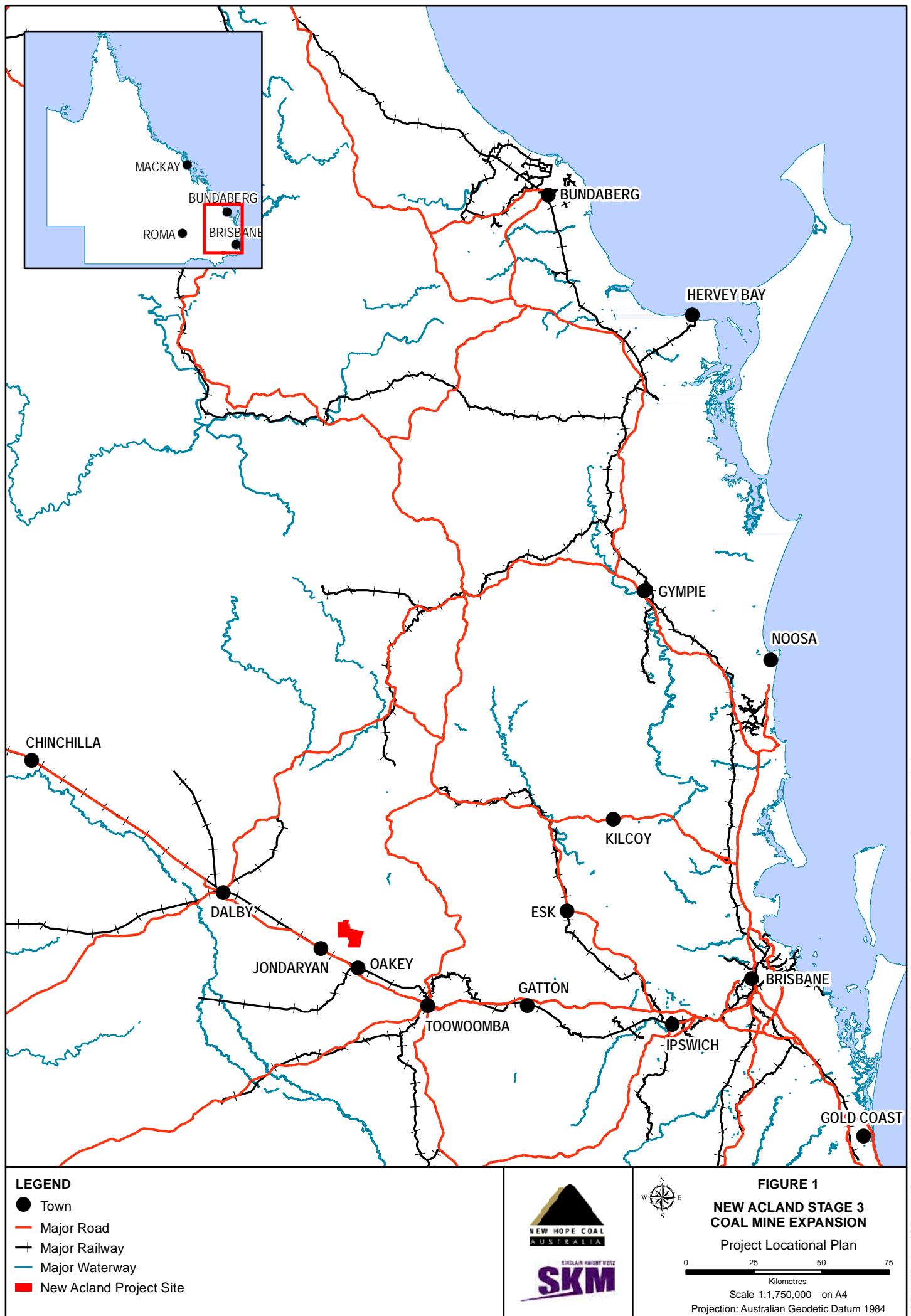
The Project Proponent is NAC, which is a fully owned subsidiary of New Hope Corporation Limited (trading name: New Hope Coal Australia (NHCA)). NHCA purchased the Acland coal reserves from Shell Coal Australia Ltd in December 1999.

NHCA has a highly successful record in the development and management of world-class open cut coal operations. In Queensland, NHCA manages the New Oakleigh Mine near Ipswich and has coal resources of over one billion tonnes in Queensland. The New Acland reserve is typical of the Walloon coal measures and is found in a multiple thin seam configuration. The attractive stripping ratios will enable NAC to utilize its proven expertise in thin seam mining to produce a high quality, low cost domestic and export coal product.

Further information concerning the Project can be obtained from:

Mr David Genn
Senior Environmental Advisor
New Hope Coal Australia
Telephone (07) 3810 0500
Email: dgenn@newhopecoal.com.au

Further information about NHCA can be obtained from: www.newhopecoal.com.au





Project Need & Alternatives

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 more than 420 people in the later years of operation. Currently, the Mine employs approximately 275 people, with an additional 169 people required before the maximum production rate of 10 Mtpa can be achieved in 2015. The Project will boost economic activity within the Toowoomba Regional Council (TRC) region of the Darling Downs through direct and indirect employment, investment and business opportunities for the life of the Project and beyond.

The Project offers an opportunity for NHCA to expand its business base, improve profitability and increase its return to shareholders. The Project's thermal coal products are a valued energy resource that possess lower sulphur, produces less greenhouse emissions and provides a higher energy output than many alternative thermal coal sources. Despite the recent global economic downturn, there is sufficient sustainable demand to support the Project. Demand for power generation capacity is expected to remain relatively strong, particularly in the developing economies of China and India, which are expected to support thermal coal use in the medium to long term.

NAC will invest approximately \$15 billion over the life of the Project on development, operational, transport and other associated activities. The Project is expected to contribute approximately \$105 million per annum to the Gross State Product. The Project will also 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.

Without the Project proceeding, NAC would be unable to maintain and improve its market share and profitability. The government would compromise its potential revenue from freight charges and related taxes. Increased employment opportunities would be lost along with potential income for the existing workforce and support contractors. Without the Project, an increase in demand for secondary support industries and service suppliers would not be realised. **Chapter 2 Project Justification and Sustainability** provides additional information supporting the need for the Project.

Project Overview

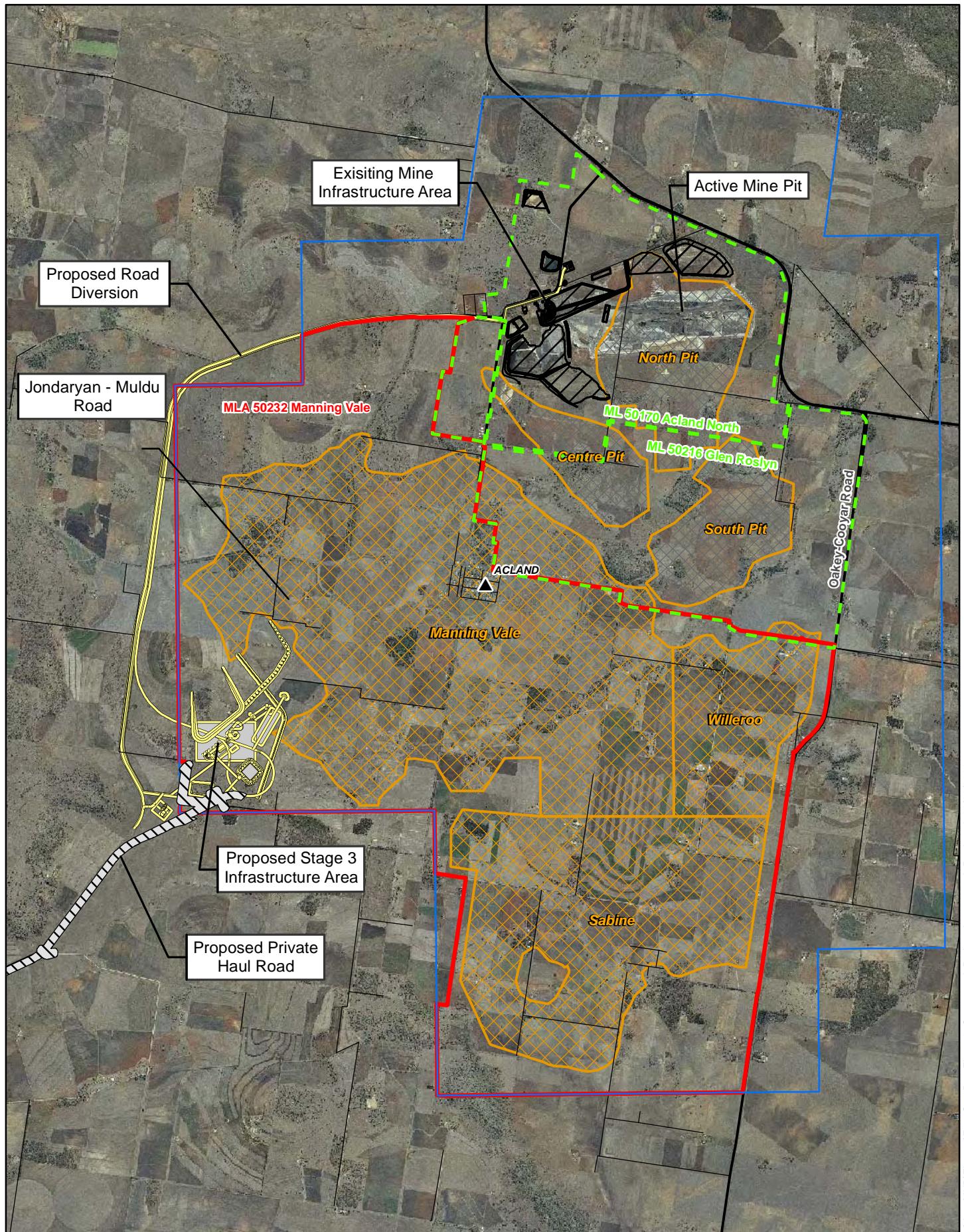
The key elements of the Project are:

- expansion of the existing mining activities by the addition of the Manning Vale, Willeroo and Sabine resource areas within Mining Lease Application (MLA) MLA 50232, located to the south and west of the current MLs 50170 and 50216;
- total production up to 10 Mtpa of product coal which equates to approximately 20 Mtpa Run-of-Mine (ROM) Coal;
- production of 279.7 Mt of product coal over the life of the Project;
- construction period commencing in 2010 to 2013, initially involving the construction of site access and roads (including re-alignments), water management structures and additional supporting infrastructure;
- maintenance of the existing thin seam coal, open cut mining techniques and expansion of the Mine's truck and loader mining fleet;



- addition of a new Coal Handling and Preparation Plant (CHPP(3)), ROM and product coal stockpile areas and supporting infrastructure on MLA 50232;
- tailings disposal within a series of Tailings Storage Facilities (TSFs) on MLA 50232 comprising an initial engineered out-of-pit TSF followed by in-pit disposal to engineered TSF's in the back filled mine pits of the current and future mine pit areas;
- construction of a new Raw Water Dam (RWD (3)) to supply CHPP 3;
- progressive disposal of coarse rejects to cells within the overburden dumps;
- emplacement of four out-of-pit spoil dumps containing a total material volume of 128.1 Mm³ associated with the Manning Vale, Sabine and Willeroo pits;
- generation of five potential final voids, comprising 560.1 hectares (ha) within the total area of the Project equalling 7 347 ha;
- raw water supply from the Wetalla Wastewater Reclamation Facility (WWRF) from Toowoomba via a 45 km pipeline. This project was the subject of a separate Environmental Impact Statement (EIS) process under the *State Development & Public Works Organisation Act 1971* (SDPWO Act);
- a mine surface water management system involving various water management structures staged to accommodate the progressive development of the Mine. These water management structures will be constructed to divert clean water and capture and manage mine area runoff and mine pit water for reuse;
- addition of a new administration and heavy vehicle maintenance area on MLA 50232;
- relocation and potential upgrade of the power supply to the Project;
- diversion of the Jondaryan-Muldu Road around the Manning Vale resource area;
- diversion of Lagoon Creek around the Manning Vale resource area and the progressive re-establishment of Lagoon Creek along its original alignment including rehabilitation of the riparian and in-stream zones;
- development of a suitable 'off set' strategy to satisfy State and Federal requirements for clearance of significant vegetation within new operational areas on MLA 50232;
- closure of the Acland Township and the relocation of significant historical items to the 'Acland Heritage Precinct' off site for tourism and other commemorative purposes;
- construction of a new 8 km private haul road as a dedicated transport corridor from the Mine to the Jondaryan Rail Loading Facility (JRLF) which will include supporting road infrastructure changes;
- continued use of the current JRLF on the main western rail line to the east of Jondaryan township;
- decommissioning and relocation of existing local telecommunication network within the Project site (area with MLA 50232);
- comprehensive progressive rehabilitation program involving continuous monitoring and reporting in line with the agreed post mining land use; and
- amendment of NAC's existing EA authorising a sustainable level of environmental harm commensurate to the Project's size and scope.

The Project's layout is displayed in **Figure 2** along with the associated mining tenements.



LEGEND

- ▲ Locality
- Road
- Proposed Stage 3 Infrastructure
- Proposed Stage 3 Infrastructure Area
- ▨ Existing Infrastructure Area
- ▨ Proposed Private Haul Road

- ▨ Glen Roslyn Stage 1 & 2 Pit Boundary
- ▨ Stage 3 Pit Boundary
- ▨ Existing Mining Lease
- Stage 3 Mining Lease Application
- Stage 3 MDL



FIGURE 2
NEW ACLAND STAGE 3
COAL MINE EXPANSION
Conceptual Project Layout

0 1 2 3
Kilometres
Scale 1:65,000 on A4
Projection: AMG - Zone 56 (AGD84)



Approval Process

The Project was declared a “significant project” by the Coordinator General (CoG) under Section 26 of the SDPWO Act. An EIS is required for a significant project. Matters considered by the CoG in making this declaration included the level of investment necessary for the Project, employment opportunities provided by the Project, potential impact on the environment, potential effect on relevant infrastructure and significance of the Project to the region and State.

The key elements of the impact assessment processes are:

- preparation of an Initial Advice Statement (InAS) by NHCA; submitted to the CoG on 18 April 2007 seeking consideration of declaration as a 'significant project'. The InAS provides information on the scale of the proposal and potential for impacts;
- development of a draft Terms of Reference (ToR) by CoG; released to government agencies and the public for review and comment from 23 July 2007 to 20 August 2007;
- preparation of the final ToR issued by the CoG in October 2007, after consideration of the agency and public comments on the draft ToR. The final ToR set out the matters to be addressed in the EIS. A copy of the final ToR is located in **Appendix D** and a table of cross references to where each item is found in the EIS is provided in **Appendix E**;
- submission of the EIS to the CoG and Advisory Agencies and public display of the EIS following advertisement of its availability, seeking for submissions on the EIS;
- preparation of a Supplementary Report addressing issues raised in submissions on the EIS provided to CoG, Advisory Agencies and all others who made a submission on the EIS; and
- preparation of the CoG Assessment Report, which is made publicly-available. The Assessment Report evaluates the EIS (which may include a Supplementary Report) and may state conditions that must attach to subsequent statutory approvals necessary for the Project, or may state that any such application for approvals must be rejected.

Copies of the EIS will be submitted to the CoG. The CoG will distribute the EIS for public and Advisory Body review and comment. The EIS will be placed on public display and copies will be made available to interested persons.

The EIS will also be made available to Advisory Bodies for their consideration. Copies of the EIS will be on display at the Toowoomba Regional Council, Oakey Public Library, Goombungee Public Library and at the DERM offices in Toowoomba and Brisbane.

Any person, group or organisation can make a written submission about the EIS to the CoG. Such submissions do not have to relate to the whole of the EIS and may relate to any aspect. Persons making a submission do not have to be an expert in any of the issues assessed in the EIS.

The EIS comments and submissions must be made in writing and sent to CoG within the comment period, as advertised in the public notice about the EIS.



All submissions, comments and enquiries regarding this EIS should be addressed to:

EIS Project Manager – New Acland Coal Mine: Stage 3 Expansion Project
Significant Projects Coordination
Department of Infrastructure & Planning
PO Box 15009
CITY EAST QLD 4002
Phone: 07 3238 3131
Fax: 07 3225 8282
Email: newaclandcoal3@dip.qld.gov.au

Environmental Management

Land Resources

The land uses nearby the project include pig farming, dairying, grain storage and various rural homestead properties. The land parcels contained within the Project site are predominantly freehold and leasehold tenures held by Acland Pastoral Company (APC). NAC has conducted an extensive Native Title search of all land tenure within the Project area (area outside MLA 50532). This search failed to identify any land subject to the statutory requirements of Commonwealth or State Native Title legislation.

The Project site is located within the Lagoon, Doctors and Spring Creek catchments. The majority of the terrain within these catchments is undulating and land use is predominantly grazing. Lagoon Creek is grazed and cultivated up to and within the creek channel.

In the upper reaches of the catchment, the terrain becomes steeper and possesses tracts of remnant vegetation. Higher, localised peaks in the Lagoon Creek catchment are also vegetated with trees.

Predominant land use patterns of the Project site have remained cash and forage cropping in addition to grazing of improved pastures. Much of the Project site has long been cleared of its original vegetation due to agricultural production, although localised areas of original remnant vegetation remain alongside Lagoon Creek, relic alluvial plains and upland low hills. The Project site has been subject to long periods of continued dry years and unreliable rainfall since the early 1990's.

A complex of soil types have developed on the gently undulating topography of the Project area in which climate, topographical position and old sedimentary periods with more recent volcanic activity have played an important role in the formation of the soil mass. Most prominent types are the deep, heavy clay alluvia, lighter clay 'scrub soils' and well structured texture contrast soils which occur on undulating plains. Areas of sandy non cracking clays and sandy duplex soils also occur.

The soils present within the Project site are generally suitable for cropping to varying degrees on the less steep areas and away from drainage lines. All soils are considered to be suitable for grazing on improved pastures with the exception of some on the upper slopes where steeper soil types exist. The Project area supports grazing industries for beef and dairy production. Grazing is predominately based on native pastures and also occurs on mixed farming enterprises combining grain and fodder production. A number of other



minor industries including piggeries, horticulture and animal studs are present within the Project area due to the diversity of soils, proximity to markets and a favorable climate. Cropping for grain production is one of the largest agricultural land uses and industries within the Project area with cultivation for cropping and / or sown pasture carried out to some extent.

Pasture lands occur throughout the Project area and mainly occur in soil types A3, A4, A5, B3 and B4. Most of these areas carry native or sown grasses supporting grazing livestock. These pasture lands are (or were) the basis for a number of beef enterprises and to a lesser extent, dairy enterprises of the Project area. The greatest proportion of these pasture lands is under native pasture.

Based on a conservative assessment, it is anticipated that there will be a significant net reduction in the land suitability rating as a result of the Project. The suitability of post-mine features with steep slopes (such as spoil piles, coal reject dumps and tailings dams) for cropping and grazing purposes is constrained by the slope angle, the nature of soil cover and altered moisture profile and waste material quality. These constraints would increase the risk of erosion significantly if cropping or grazing were undertaken on these areas. A return to grazing is entirely feasible for much of the Project site post-mining.

The Rosalie Shire Planning Scheme shows that the Project site overlies Class A and Class B Good Quality Agricultural Land (GQAL). Approximately 80% of the Project site lies within Class A and 20% within Class B. The Project will disturbed 2,900 ha of Class A GQAL with existing cropping use, while 759 ha of Class B GQAL will be impacted upon. However, Class B GQAL is considered to be marginal at best for cropping and more suited to grazing use.

A search of the Contaminated land Register (CLR) and the Environmental Management Register (EMR) has been conducted. No land parcels were recorded on the CLR. The search revealed that four sites are listed on the EMR. One of those sites is the Tip. It has been estimated that the Tip contains approximately 62,000 m³ of soil and waste material. Chemical analysis is currently being undertaken of samples of soil and waste material collected from the Tip. Based on the results of the chemical analysis, a relocation strategy for the Tip will be determined. The preferred strategy is to relocate the soil and waste material to an engineered containment cell within one of the Projects existing mine pits.

The spoil associated with the Project consists of weathered and fresh overburden having slightly higher clay content than the interburden and floor material. This material is generally geochemically benign, with negligible acid generation potential. During the initial phases of operation, and continuing throughout life of mine, it is proposed to carry out analysis of overburden and tailings material to confirm its geochemical characteristics, and if necessary, implement a series of mitigation measures as outlined above. Overall, the material tested is likely to be suitable for revegetation. Topsoil will also be used as a surface treatment prior to revegetation to minimise any effects from sodic spoil.

The overriding principle for the rehabilitation program at the Project is to ensure the disturbed land is returned to a post-mine condition that is stable, self-sustaining and requires minimal maintenance. The main post-mine land use at the Project will be grazing based on a self sustaining vegetation community using appropriate pasture grasses and scattered plantings of native tree and shrub species. A smaller area of the Project site will be dedicated for conservation purposes and will involve the re-establishment of a section of Lagoon Creek's riparian zone using the appropriate native plant species.



A progressive rehabilitation program will be implemented throughout the mine life and reported in each Plan of Operations and will commence when areas become available within the operational land.

The site-specific criteria for achieving a self-sustaining vegetation community will be developed during the operation based on rehabilitation trials and the monitoring of progressive rehabilitation. Rehabilitated areas will be monitored using the selected parameters and trends tracked to demonstrate establishment. The experience at the Mine has shown that pasture establishment on spoil dumps is successful.

Rehabilitated land will be monitored on an annual basis until monitoring data confirms successful achievement of the agreed rehabilitation performance criteria. Rehabilitated areas that have not reached a sufficient growth density of vegetation will be reseeded. Supplementary sowing of seed may be used to increase species diversity.

A Mine Closure Plan will be submitted to the DERM at least five years prior to the surrender of the EA. The decommissioning and final rehabilitation of the Project will occur on a staged basis over several years.

Surface Water Resources

The Project's mining operations will impact on the catchments in the mid reaches of Lagoon Creek. Runoff from all disturbed areas will be captured in the mine pits or through bunding and stored in sedimentation and environmental dams. As a result, a smaller percentage of runoff will report to Lagoon Creek.

Lagoon Creek is an ephemeral creek with NAC's flow monitoring gauge reporting only small flows twice in the past two years. The existing creek includes numerous in-stream dams that retain flows from reaching downstream users. As a result, the impact of the Project's operations on existing flows in Lagoon Creek is expected to be small.

All water allocations downstream of Lagoon Creek are located downstream of the confluence with Lagoon and Doctors Creek with the majority along Oakey Creek. The closest user is located 10 km downstream of the Project. As the full Project site accounts for less than 0.03% of the Oakey Creek Catchment, the affect on these water users is expected to be small. The Project's operations are expected to have a negligible impact on the Condamine and Balonne Water Supply Schemes with Lagoon Creek representing less than 0.005% of the Condamine Balonne Catchment.

To allow complete and efficient coal extraction, it is proposed to divert an 8.2 km section of Lagoon Creek. The diversion will be staged involving two concurrent temporary diversions, a smaller permanent diversion and re-instatement of the majority of the creek channel as close as possible to its original alignment. The diversion will provide the mine with 1 000 year ARI flood immunity and a mechanism to transfer flood flows downstream minimising the impacts on downstream users and the environment. As part of the rehabilitation of the Project site, Lagoon Creek will be reinstated as far as practical to its original location.

The mine water demands for the Project will utilise an agreed supply of recycled water from TRC's Wetalla Wastewater Reclamation Facility (WWRF). This water source will minimise the Project's reliance on groundwater supplies and demonstrates a beneficial use of a waste product. As part of the water management system, runoff from all disturbed areas will be captured and treated for reuse by the Project's water management system. Modelling shows that controlled discharges or uncontrolled releases are not



expected to occur over the life of the Project and can be managed by the current and planned water management structures.

NAC will expand its current water quality monitoring program to incorporate the construction, operation and decommissioning aspects of the Project. The water quality monitoring program is designed to ensure the Project's water management is effective, to demonstrate compliance with the Project's statutory requirements and to ensure the receiving environment downstream of the Project is not being adversely impacted.

Groundwater Resources

Five aquifers exist within the Project site. The Quaternary Alluvial aquifer is limited in spatial extent and is likely to exist in association with Lagoon Creek within the Project site. A review of bore logs from drilling undertaken as part of the Project baseline assessment demonstrates that there is only a minor outcrop of the Tertiary Basalt Aquifer in the northern section of the Project site.

The Walloon Coal Measures aquifer outcrops over much of the Project site. Results obtained from the pumping tests undertaken suggest that the Walloon Coal Measures aquifer is a single system with variable aquifer parameters. Results suggest that a leaky aquifer system exists with vertical movement of groundwater occurring where the confining layer is thin or absent within the Walloon Coal Measures aquifer. The Walloon Coal Measures is the major groundwater aquifer intersected by the Project.

The Marburg Sandstone and Helidon Sandstone aquifers are a part of the Great Artesian Basin and are the deepest semi-confined to confined aquifers underlying the Project site. These aquifers will not be affected by the Project.

As part of the impact assessment, a numerical groundwater model was used to predict the impact of groundwater drawdown from mine pit dewatering. The modelling was used to assess the amount of drawdown and hence the potential impact of mine pit flows on existing groundwater users. The worst case scenario (high transmissivity and at the end of mine life) indicates that the radius of influence within the Walloon Coal Measures aquifer (zero drawdown) extends approximately 5 km from MDL 244's boundary . Drawdown in the Walloon Coal Measures outside MDL 244 is between 1 m to 5 m during mine operation decreasing to less than 0.5 m fifty years after cessation of mining operations. A drawdown of 5 m is unlikely to have any impact on the operation of existing pumping bores in the Walloon Coal Measures or Marburg Sandstone Aquifers.

Post closure, it is expected that groundwater will flow towards the main final void and as a result, the depression of the potentiometric surface within the vicinity of the final voids will act as a groundwater sink and will not permit water within the final voids to flow outwards into the regional system.

The groundwater monitoring program currently being undertaken by the Mine will be extended to include additional locations within the Project site. The groundwater monitoring program that will be undertaken on the Project site will include a minimum of 16 bores. Groundwater monitoring will be conducted on a regular basis and will provide information to detect any significant variations to the existing groundwater system over the life of the Project.



The Project is not expected to have a detrimental impact to the groundwater quality in the proximity of the Project site. The vulnerability of the underlying aquifers to pollution is expected to be minimal.

A comprehensive groundwater model will be constructed throughout the course of the mine life to accurately predict long-term behaviour of the aquifers. This modelling will assist the refinement of post mining groundwater monitoring programs.

Terrestrial Ecology

The Project site has a long history of vegetation clearing and grazing, resulting in significant losses of remnant forest and woodland; suppression of natural regeneration through cropping and grazing; a high level of habitat fragmentation; introduction of a range of pest vertebrates and weed invasion.

These impacts are evident throughout the Project site with only small remnants of original vegetation present. The majority of the Project's footprint is located on cleared agricultural land. Approximately 10% of the Project site contains remnant or regrowth vegetation which has regenerated to a point at which it is recognisable as a vegetation community in terms of both structure and floristic composition.

Nevertheless, the Project site supports a number of “of concern” and “endangered” Regional Ecosystems (RE’s), some of which are also recognised as Endangered Ecological Communities (EEC’s) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Threatened regional ecosystems include the following.

- RE 11.3.1 *Acacia harpophylla* woodland or open forest on alluvial plains (Endangered). This RE is also a component of the EPBC listed Brigalow Community, an endangered ecological community under the EPBC Act.
- RE 11.3.2 *Eucalyptus populnea* woodland on alluvial plains; *Eucalyptus conica* woodland on alluvial plains (Of Concern).
- RE 11.3.17 *Eucalyptus populnea* woodland with *Acacia harpophylla* and/or *Casuarina cristata* on alluvial plains (Of Concern).
- RE 11.3.21 *Dichanthium sericeum* and/or *Astrebla* spp. grassland on alluvial plains (Endangered). This RE is also a component of the EPBC listed Blugrass Community, an endangered ecological community under the EPBC Act.
- RE 11.9.10 *Acacia harpophylla*, *Eucalyptus populnea* open forest on Cainozoic fine-grained sedimentary rocks (Of Concern).
- In total, an area of 243 ha of mapped vegetation types representative of six regional ecosystems will be cleared for the Project.

Four significant flora species are known to occur within the Project site, these are as follows.

- *Homopholis belsonii* (Vulnerable) – The majority of areas where Belson’s panic occurs would be cleared for the construction of the pit and waste rock dumps. A PSMP will be developed for this species and implemented to ensure no net loss of individuals from the local population.
- *Bothriochloa biloba* (Vulnerable) - Of the two patches of lobed bluegrass within the MDL 244 one of the patches would be cleared for the construction of the pit and the other patch may be impacted by the



construction of a new road for the proposed mine expansion. A PSMP will be developed for this species and implemented to ensure no net loss of individuals from the local population. Confirmation of the continued existence of this species within the Project area is required.

- *Stemmancantha australis* (Vulnerable) – Three patches occur within the vicinity of the proposed private haul road corridor. These patches may be impacted by construction of the private haul road depending upon the final alignment. If it is possible to avoid these specimens this will be the preferred approach to management.
- *Digitaria porrecta* (Endangered) - A single patch of finger panic grass is present within MDL 244 and will be removed for the construction of the pit and waste rock dumps. The PSMP will be developed for this species and implemented to ensure no net loss of individuals from the local population. Confirmation of the continued existence of this species within the Project area is required.

Two Rare fauna species, recognised under the *Nature Conservation Act 1992* (NC Act), were recorded within the Project site, the Painted Honeyeater and Little Pied Bat. Both species will incur a localised loss of habitat. This loss will be offset in the long term by the rehabilitation of Lagoon Creek. In the short term, the Project site will be largely unsuitable for these species.

NAC will take reasonable steps to control pest and weed species across the Project site and will develop a new Weed/Pest Management Plan.

Impacts on biodiversity values are to be offset by a number of complimentary actions, including the development of a Bluegrass Revegetation Management Plan (BRMP), a Lagoon Creek Rehabilitation and a Protected Species Management Plan (LCRP).

- The BRMP will articulate the approach to developing a biodiversity offset for the 78.5 ha of remnant *Dichanthium sericeum* grassland community. The proposed biodiversity offset will be located on land owned and controlled by APC, and comprise an area of 80 ha. NAC's proposed biodiversity offset will involve establishing a new area of *D. sericeum* grassland community within a parcel of land already used for agricultural purposes.
- To facilitate the progressive re-establishment of the 170 ha riparian zone of Lagoon Creek, NAC will develop a specific management plan for rehabilitation and long term management. It is envisaged the LCRP will also address rehabilitation of the in-stream portion of the creek, for example, channel structure, aquatic flora and fauna management. The main components of the LCRP would include the revegetation and management goals/objectives, planned revegetation techniques, rehabilitation acceptance criteria, a monitoring and reporting regime, a maintenance regime for weeds and poor establishment, and a comprehensive long term management regime.
- The Protected Species Relocation Management Plan (PSRMP) will include the transplantation and management goals / objectives, site details, a propagule collection and propagation strategy, planned transplantation techniques, transplantation success criteria, a monitoring and reporting regime, a maintenance regime for weeds and poor establishment, and a comprehensive long term management regime.

The full implementation of these measures will ensure that the Project results in a net conservation benefit at the ecological community/regional ecosystem and species level.



Aquatic Ecology

Lagoon Creek merges with Oakey Creek south of the Project site and ultimately forms part of the Condamine River. Lagoon Creek is an ephemeral creek and only flows during periods of high rainfall, as a result, flows would be of short duration. The existing aquatic habitat is considered to be in poor condition and has been moderately disturbed.

No threatened or endangered aquatic flora or fauna such as macroinvertebrate, turtles and / or fish could be found inhabiting the waterways within the Project site or the surrounding water courses. No species or habitats were located within the Project site showing any special significance in terms of aquatic flora or fauna.

Disturbance from land uses, clearing of the riparian vegetation, erosion and stream channel modification have significantly altered the available aquatic habitat within Lagoon Creek. The existing aquatic habitat, while categorised in poor condition, is providing habitat for a number of native aquatic species.

Construction and operation of the Project will require the implementation of an aquatic flora and fauna monitoring program to gather baseline information, monitor potential impacts during construction and operation and assist in rehabilitation of the reconstructed Lagoon Creek.

Air Quality

The potential air quality impacts of the Project were modelled. Ausplume was used to predict PM₁₀ and TSP concentrations and dust deposition rates at sensitive receivers for current operations and Years 2025 and 2036 of the Project.

The predicted maximum PM₁₀ concentrations at a number of sensitive receivers are well above the ambient air quality goal of 50 µg/m³. The predicted air quality impacts of the Project are expected to be conservative however, the Project is likely to result in exceedances of the air quality goal at some sensitive receivers. NAC have informed local landholders about the potential for dust impacts from the Project and have commenced negotiations to purchase properties where it is considered likely the air quality goals will be exceeded.

NAC have demonstrated their proactive approach to managing dust through their ongoing monitoring program. The air quality monitoring program will continue to be undertaken to detect if the Project is generating potential air quality impacts. Consultation with the landholders and implementing dust mitigation measures should assist in reducing the potential for dust nuisance.

Greenhouse Gas and Climate Change

A preliminary greenhouse gas inventory has been prepared for the operation of the Project. The main sources of greenhouse gas emissions for the Project are:

- direct CO₂ emissions from fuel combustion in mining equipment;
- fugitive CH₄ and CO₂ emissions from coal seams, product coal and rejects; and
- indirect CO₂ emissions due to consumption of electricity.



Greenhouse gas emissions were estimated based on fuel, electricity, and explosives consumption in current operations at the Mine. These consumption rates were scaled on the basis of quantities of ROM coal and overburden movements for the Project. The Project is estimated to result in approximately 15.4 Mt CO₂-e of greenhouse gases for the life of Project, or 0.51 Mt CO₂-e on an annual basis (based on a 30 year project life). The annual greenhouse gas emissions for the Project represent 0.09% of Australia's 2006 greenhouse gas emissions.

The following management measures are proposed for the Project to minimise greenhouse gas emissions:

- plan and operate the mining activities for the Project to improve efficiency and minimise energy use (for example minimising haul distances);
- consider fuel efficiency of mining equipment and haul trucks during procurement;
- maintain mining equipment and haul trucks in good working order so fuel efficiency of equipment is maximised;
- use appropriately sized equipment;
- estimate and report annual greenhouse gas emissions to the relevant regulatory authority, as required, to assist with the ongoing management of energy efficiency programs; and
- review annual energy use to identify potential energy efficiency opportunities on a regular and ongoing basis.

Mitigations measures to minimise any potential impacts from climate change include:

- the use of recycled waste from Toowoomba's WWRF;
- designing a responsive water management system with the capability to deal with severe storm events; and
- undertaking progressive rehabilitation to reduce potential for damage.

Noise and Vibration

The noise and vibration impact assessment of the Project has been carried out. A computer noise model was developed using SoundPlan version 6.5 to predict the noise impact during different stages of the mining operations.

In year 2014, the predicted noise levels from the mining operation will meet the daytime, evening and night time noise criteria at all noise sensitive receivers. In year 2025, noise levels from mining activities are predicted to exceed the night time noise criteria at two noise sensitive receivers. In year 2036, noise levels are predicted to exceed the night time noise criteria at two noise sensitive receivers and are predicted to exceed the daytime, evening and night time noise criteria at two other noise sensitive receivers. Excavators, haul trucks and graders will be the most dominant noise sources.

In year 2036, when mining activities progress to the Willeroo area and the northern side of the Sabine area, the distance between the mine pit and the nearest noise sensitive receiver are predicted to be less than 500 m at some stage. At this small distance, the predicted noise levels from the mining operation will exceed the night time noise criteria at two noise sensitive receivers, and are predicted to exceed the daytime,



evening and night time noise criteria at an additional two noise sensitive receivers. At noise sensitive receivers, excavators, graders, haul trucks, drilling rigs and dozers will be the most dominant noise sources.

The low frequency noise character from the Project has been assessed and is considered acceptable up to year 2025. However, in year 2036, when mining activities progress to the Willeroo area and the northern side of the Sabine area, the low frequency noise criteria will be exceeded at two sensitive receivers.

For blasting activities, the airblast and vibration criteria will be met at all sensitive receivers in year 2014 and 2025. However, in year 2036, when blasting activities is likely to be less than 500 m from the nearest sensitive receiver and the airblast and vibration criteria are likely to be exceeded at several sensitive receivers. Road traffic noise impacts have been assessed and are considered acceptable.

Cultural Heritage

Non-indigenous and Indigenous cultural heritage places and values have been recorded as part of the cultural heritage assessments over the Project site.

A non-indigenous cultural heritage assessment was conducted in late 2008 as part of the overall Project heritage assessment. The area covered included the area around Acland Township and the former townships of Sabine and Greenwood.

The township of Acland, which is now largely owned by APC, will be closed and removed before mining activities commence. The TRC, selected local landowners and NAC have formed the Acland Heritage Precinct Advisory Committee (the AHPAC) to manage the relocation of significant items of the township of Acland to an 'Acland Heritage Precinct' off site for tourism and other commemorative purposes. NAC is taking all reasonable and practical measures to ensure the closure and removal of significant items is conducted in an appropriate manner and to the satisfaction of all stakeholders involved in the process.

Two Traditional Owner groups, the Western Wakka Wakka People and the Jarowair People, originally laid claim to the land covered by MLs 50170, 50216 and MLA 50232. NAC possesses signed 'Co-operation Agreements' and signed Cultural Heritage Management Plans (CHMPs) with the Western Wakka Wakka People and the Jarowair People.

During 2007, NAC was advised by the then Department of Natural Resources and Water (DNRW) that while no Native Title claims currently exist over the Acland area, the Western Wakka Wakka People, as the last registered Native Title claimants, are the sole legal Traditional Owners under the *Aboriginal Cultural Heritage Act 2003* (ACH Act). NAC has received legal advice that has confirmed this position and as consequence, now only deal with the Western Wakka Wakka People on cultural heritage matters. NAC continues to interact with the Jarowair People on non-cultural heritage matters (i.e. as defined by relevant sections of the Co-operation Agreement and CHMP).

Artefact scatters and sites within the Project site were recorded. The distribution of artefacts has however been greatly affected by vegetation clearing, ploughing and other agricultural practices, cattle grazing and infrastructure construction.



NAC and the Traditional Owner groups will continue to progressively implement the requirements of their respective Co-operation Agreements and CHMPs to ensure the proper management and the protection of Aboriginal cultural heritage within the Project site.

Traffic and Infrastructure

The traffic assessment examined potential traffic impacts from the Project during both the construction and operation phases. The traffic assessment found that both the construction and operational phases are not expected to have a significant impact on traffic operations on any of the studied road links, with the 'Level of Service' for each phase estimated to remain unchanged for each road section in comparison to the background traffic volumes.

Road intersection assessment will be undertaken during the preliminary design phase of the project. They will assess the existing configurations and any new intersections required for the Project. NAC will ensure that all road intersections required for the Project are adequate to safely cater for the construction and operational traffic volumes. The Department of Transport and Main Roads (DTMR) and TRC will be consulted on any road / intersection design related matter.

The three school bus routes affected by the Project will need to be gradually relocated. During the operational phase of the Project, new (relocated) school bus routes will replace the existing routes.

A number of mitigation measures will be implemented to reduce any potential impact to traffic from the project. Mitigation measures include; scheduling tasks outside peak traffic periods, conducting materials haulage on established truck and arterial routes, staging of construction works to minimise congestion, notification and consultation as appropriate, implementation of local traffic control measures, provision of adequate parking, and utilisation of the private haul road.

Waste Management

During the Project construction, operation and decommissioning phases, waste will be managed to avoid adverse impacts on the life, health and wellbeing of people and the diversity of ecological processes and associated ecosystems surrounding the Project site.

Maintaining segregation of different types of waste during generation, storage or transportation makes recovery achievable. The appropriate management and storage of wastes will prevent on site and off site pollution and enhance opportunities for reuse and / or recycling. Waste that is not regulated will be sent for disposal to landfill if other options have been ruled out. All waste streams will be assessed for potential reuse, prior to transport to an approved waste disposal facility.

The Project will not generate many wastes that have a market demand. There are likely to be opportunities to reuse and recycle aluminium cans, some containers such as glass bottles, paper and scrap steel. Some other general wastes will be recycled or reused on site, such as pallets, or disposed of by licensed waste management contractors.



Visual Amenity

Through the clearing of vegetation and the excavation of the mining areas, the Project will alter the visual characteristics of the site from the start and the landscape will continue to change over the life of the mining operations. The topography of the Project site will also be altered, albeit over time, through the placement of spoil external to the proposed mine pits.

The low-lying nature of the Project area generally provides for extensive views of a predominately rural landscape with a medium degree of visual amenity. Apart from the Mine, the Project area is dominated by vegetated landscapes, both rural and natural, that are interspersed with unobtrusive residential developments.

The Mine is a visually prominent feature within the existing landscape; however, through the implementation of mitigation measures, views of the mining operations from sensitive receptors would be limited.

Post-operation of the Project, the out-of-pit spoil dumps and remnant voids will be revegetated and returned to a relatively natural form. In the long-term, it is expected that impacts from the Project on the visual landscape will be negligible as the peaks and dips associated with the out-of-pit spoil dumps and the remnant voids will be similar to the undulating topography that is common throughout the broader, regional landscape.

Social Impact

Several key benefits and impacts are likely to be associated with the Project. Benefits will include the creation of employment and procurement opportunities for local and regional communities, as well as the increased spending power of employees and the associated boost to the local economy. These benefits will be enhanced through the implementation of local procurement and recruitment policies, as well as through NAC's direct involvement in local communities. The level of community services and infrastructure in local communities may also be improved through demands created by an increased population and opportunities would become available for younger people to stay in the community and access relevant training and employment opportunities.

If a significant increase in the local population is experienced due to Project related employment opportunities, negative impacts may include increased demand for residential accommodation and decreased housing affordability. The state of the local and regional property markets will also have an important influence over the degree of impact.

Challenges in the provision of community services and infrastructure may also result, particularly in the health services sector, which has limited capacity. Commuter traffic and road damage is an existing problem between Toowoomba and Oakey and as a result, may deteriorate if the population of Toowoomba is significantly increased. Future government policy direction and spending levels in these service and infrastructure areas will also be critical factors.

The following management measures will be implemented by NAC to enhance benefits and minimise impacts:



- where possible, NAC will continue to undertake recruitment that promotes the employment of local people;
- NAC will continue to consult with local government and community service providers to discuss the requirements of the Project and possible business opportunities;
- NAC will provide ongoing feedback to the TRC, government agencies and community groups with regard to the progress of the Project so that the necessary preparations can be made in a timely manner;
- NAC will provide a reasonable level of financial support to facilitate the relocation of the Acland War Memorial and other items of historical importance as agreed by the TRC; and
- NAC will continue its community support program for local individuals, clubs and schools.

The application of the recommended mitigation measures will help reduce the potential impact on employees and nearby communities.

Economic Environment

The Project is predicted to return close to \$47 million in direct benefits, through additional wages being introduced into the economy. In the high employment scenario, the Project created a NPEV benefit of over \$276 million to the host economy over the 2009 to 2041 period. Based on the assessment, the Project has the potential to create positive economic impacts as a result of the relationship between the level of employment in the Darling Downs Statistical Division and the level of consumption of regional goods and services. Assuming 52 working weeks per annum for the construction period, the total potential expenditure in local businesses by Project workers during the construction phase is approximately \$20.2 million. Based on a range of potential operational workforce numbers, the additional spending over the period of 2009 to 2041 equates to between \$61 million and \$75 million. This amounts to an annual average of between \$1.8 million and \$2.2 million.

Spending in local businesses by Project employees will have flow on effects to the local and regional economies. In the short-term, local businesses will enjoy increased profitability and could potentially be required to hire additional employees. In the long term, the Project will provide new business opportunities, such as expansion of existing businesses and attracting new businesses to open in the region. Such broadening of the regional economic base would reduce the risk of local economic fluctuations and increase regional workforce stability in the Project's upstream and downstream industries.

The Project will have a substantial impact on the local workforce. The area is characterised by a relatively tight labour market, a low unemployment rate and a shortage in skilled labour. Therefore, it is likely that the majority of both the construction and operational workforces will be sourced from outside of the host economy.

NAC will work closely with a variety of stakeholders to ensure that all reasonable and practicable measures are implemented to support the local and regional communities.



Health, Safety and Risk

The Project risk is generally 'Low' or 'Moderate' with the exception of safety risks from highwall rock fall and blasting and contact with electricity which have been assessed as 'High' risk. It should be noted that these are assessed as high since there is significant energy involved and the controls can only address the probability of the event.

A health and safety management system is implemented throughout NAC's existing operations. The system adopts an integrated approach to risk management of the operations, recognising the hazards at all points in the operations and how these are controlled. The system adopts an integrated approach to risk management of the operations, recognising the hazards at all points in the operations and how these are controlled. The system will be adopted for the Project.

Community Consultation

Over 150 separate stakeholder interactions were conducted throughout the public consultation process for the EIS between July 2007 and December 2008. These interactions took place across a variety of 10 public consultation mechanisms including individual meetings, community information sessions, a community survey and newsletters.

Stakeholders were identified based on their proximity to the Project site and statutory identification as either an Affected Person (primary stakeholder) or Interested Person (secondary stakeholder). Stakeholders with an interest in regional issues such as environment and community were also engaged as well as government representatives and service and facility providers.

The key issues identified throughout the public consultation process were:

- The existing poor condition of local roads and highways.
- The impact on property values and the ability to sell.
- The use of water resources and impacts to groundwater quality.
- The impact of the Proponent's acquisition of properties for the Project on community cohesion and the rural and agricultural amenity of the area.

Cumulative Impacts

There are three areas with potential for cumulative impacts: localised cumulative impacts; cumulative impacts from regional projects; and global cumulative impacts.

Localised cumulative impacts result from mining operations in the immediate vicinity of the Project site. The impacts of projects are often assessed by comparing the post-project situation to a pre-existing baseline. The areas of impacts include land resources, groundwater and surface water quality surface water resources, groundwater drawdown, air quality, noise and vibration and transport.

Regional cumulative impacts occur when two or more projects are close enough that their combined impacts may be significant. For example, an individual coal mine may not represent a substantial impact. However,



the cumulative effect on issues such as habitat loss, water quality degradation, and socio-economic impacts may be sufficient enough to warrant consideration.

Indirect cumulative impacts are impact that are not a direct result of the construction and operation of the Project, but may occur as a result of a complex pathway. The major potential for indirect impacts with the Project is associated with transport and combustion of coal. There will also be indirect socio-economic impacts occurring as a result of the Project.

Draft EM Plan

The draft Environmental Management Plan (draft EM Plan) has been prepared to address the ToR.

The draft EM Plan is required under Section 201 of the EP Act. Section 202 states that the purpose of a draft EM Plan is to propose environmental protection commitments to assist the administering authority in the preparation of the draft EA.

The content of the draft EM Plan addresses the DERMs '*Guideline No. 8, ‘Preparing an Environmental Management Overview Strategy (EMOS) for non-standard Mining Projects’*' (the Guideline).

The commitments expressed are measurable and auditable, set objectives and outline control strategies to achieve the objectives. The draft EM Plan is located in **Appendix N**.