QCoal Pty Ltd

SONOMA COAL PROJECT

INITIAL ADVICE STATEMENT

Prepared By:

McCOLLUM ENVIRONMENTAL MANAGEMENT SERVICES

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TABLE OF CONTENTS

1 INTRODUCTION 1
1.1 General 1
1.2 Proponent 1
1.3 Project Overview 2
2 EXISTING ENVIRONMENTAL CONDITIONS 3
2.1 Bio-physical Environment 3
2.2 Cultural Heritage 7
2.3 Socio-economic 7
3 DESCRIPTION OF PROPOSED DEVELOPMENT 8
3.1 Operations 8
3.2 Alternatives Considered 11
3.3 Infrastructure Demands 12
3.4 Effluent, Solid Wastes, Air Emissions and Noise 13
3.5 Transport 14
3.6 Physical Alteration of the Area 15
4 ENVIRONMENTAL MANAGEMENT STRATEGIES 15
5 POTENTIAL SOCIO-ECONOMIC IMPACTS 18
5.1 Potential Community Concerns 18
5.2 Economic Benefits 19
6 CONSULTATION 20
7 MONITORING RESEARCH AND REPORTING 23
8 BIBLIOGRAPHY 24

List of Figures

Figure 1: Sonoma Coal Project, Regional Locality Map
Figure 2: Sonoma Coal Project, Project Location
Figure 3: Sonoma Coal Project ,Soils and Vegetation Map
Figure 4: Sonoma Coal Project, Proposed Vegetation Clearing

List of Tables

Table 1: Real Property Descriptions for Proposed Mining Lease Area
Table 2: Affected Parties
Table 3: Interested Parties
Table 4: Vegetation Units and Corresponding Regional Ecosystems

1 INTRODUCTION

1.1 General

This Initial Advice Statement, (IAS) has been prepared as an initiating step in the environmental impact assessment process outlined by the Queensland and Federal legislative frameworks.

The IAS forms a key component of the process for the grant of Mining Leases, which includes an application to submit a Voluntary Environmental Impact Statement, (EIS). The process is provided for by the Queensland *Mineral Resources Act 1989* and the Queensland *Environmental Protection Act 1994*.

The project has been referred to the Commonwealth Department of Environment and Heritage (DEH) for a decision on the significance of the project in relation to the Commonwealth Environmental Protection and Biodiversity Conservation Act (EPBC Act).

The key objective of this IAS is to, provide early and adequate advice in relation to the proposed mining development and to enable appropriate and timely assessment processes to be established.

The IAS has been prepared in support of the Voluntary EIS Application and for the information of stakeholders and interested parties. The intent of the document is to provide a brief introduction of the existing environment within the project area, proposed operations, potential impacts of the project and an outline of environmental management strategies to be employed.

1.2 Proponent

The project proponent is QCoal Pty Ltd, (QCoal).

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QCoal is a privately owned Queensland company based in Brisbane. QCoal has been active in the Queensland coal exploration and mining industry for over ten years. The company has been responsible for the discovery of the Coppabella deposit which is now an open cut mine producing around 4.5 million tonnes of product coal per annum. Exploration

in the Collinsville area over recent years has resulted in the discovery of a new shallow coal resource named Sonoma after the pastoral property on which it occurs. The management of QCoal has extensive contacts with overseas steel mills, power stations and trading companies to assist in marketing of the coal.

QCoal are committed to the management of the proposed Sonoma Project within the principles of Ecologically Sustainable Development, as defined in the Commonwealth Government National Strategy for Ecologically Sustainable Development, (1992).

1.3 Project Overview

QCoal proposes development of the Sonoma Project, an open cut coal mine located approximately 6km south of the township of Collinsville in Queensland's Bowen Basin. The project is expected to consist of three mining leases located primarily on sections of the grazing properties known as Sonoma Station and Belmore Downs Station. The area within the proposed lease boundaries covers approximately 3560 hectares and incorporates buffer capacity to enable protection of significant environmental values such as:

- Remnant ecological habitat associated with Coral Creek, important to the conservation listed Squatter Pigeon and conservation listed *Eucalyptus raveretiana* which is common in the vegetation complex;
- Cultural Heritage associated with Coral Creek; and
- Attenuation zones for sensitive receptors in relation to air quality, noise and vibration.

The Sonoma Project is located on real property descriptions as detailed in Table 1. The project is contained within Exploration Permit Coal, (EPC) 586 and EPC639, under which access for environmental studies for the proposed project is gained. Figures 1 and 2 show the proposed regional location and project layout.

Table 1: Real Property Descriptions for Proposed Mining Lease Area - Sonoma Project

Property Name	Real Property Description
Sonoma Station	Lot 25, DK 276 – Grazing Homestead Freeholding Lease
Belmore Downs Station	Lot 3, SP134564 - Freehold

Exploration activities have defined a resource of approximately 40 million tonnes, (Mt) of economically recoverable coal. Mining operations will extract approximately three million tonnes per annum, (3Mtpa) of Run of Mine, (ROM) coal for processing and sale of approximately 2Mtpa product, to export markets. The resource is mainly coking coal,

however, economic quantities of thermal coal are also contained within the deposit which will be mined for sale.

The life of the operation is expected to be in the order of 15 years with the potential to extend the mine life as ongoing exploration activities identify further coal reserves.

2 EXISTING ENVIRONMENTAL CONDITIONS

2.1 Bio-physical Environment

Topography and Land Use

The project site is gently undulating with low ridges (2 to 4% gradient) trending to the north and west towards Coral Creek and its tributaries. Coral Creek traverses the northern section of the proposed lease. The drainage system is deeply incised and forms an upper tributary to the Bowen River.

The existing land use in the area of the Sonoma Project is primarily cattle grazing. The natural environment is highly disturbed as a result of historical clearing and associated grazing activities.

The local region surrounding the project also contains the major coal mines of Collinsville and Newlands. Immediately adjacent to the Sonoma Project is the decommissioned Pipeline Coal Mine.

Geology and Soils

The geology of the area consists of Upper Permian deposits from the Blackwater Group and the Blenheim Subgroup. Outcrops in the Blackwater Group include lithic sandstone, siltstone, quartzose sandstone, carbonaceous shale with coal seams, pebble and cobble conglomerate, dolomitic and calcareous sandstone, tuff and plant fossils (petrified wood). Outcrops in the Blenheim Subgroup include siltstone, sandstone, fossiliferous calcareous sandstone, coquinite, limestone and marine fossils.

The soils of the project area have been surveyed by Global Soil Systems (GSS) and show dark grey uniform soils with medium clay textures dominating the site. A gradational variant to the dominant unit occurs with coarser texture throughout. An orange brown gradational sandy loam adjoins Coral Creek and a red duplex soil unit is evident throughout the south eastern side of the lease, Figure 3 shows the soils of the project area. The soils are generally, non-saline, non-sodic with little potential for acid generation.

Vegetation

The flora of the proposed lease area was studied by Central Queensland University, (CQU) during September 2004. The proposed Sonoma Leases are in Province 6 (close to the border of Province 2) of Bioregion 11. The flora survey mapped 11 vegetation units which were aligned with nine Regional Ecosystems (RE's) of which only two RE's are listed as part of Province 6. The flora survey has refined the RE distribution in the area which had previously been mapped by the Environmental Protection Agency, (EPA) using broad scale imagery, see Figure 3 and Table 4. An application for amendment to the RE Mapping will be made in due course.

Within the Sonoma Project area, the vegetation is mainly cleared with patches of remnant vegetation on the plains and along Coral Creek. The remnant riparian zone on Coral Creek is Regional Ecosystem (RE) 11.3.25 with *Eucalyptus tereticornis* and *E. raveretiana* overstorey with *Casuarina cunninghamii*, *Callistemon viminalis* and rainforest species in the understorey. Close to Coral Creek are small patches of RE 11.3.10 (*E. brownii* woodlands) and RE 11.3.4 (*E. tereticornis* and *Corymbia tesselaris* woodlands). The major patches of remnant vegetation on the plains are a mixed-woodland co-dominated by *E .crebra, Corymbia dallachiana* and *Corymbia erythrophloia* and best described as RE 11.3.29. Small patches of RE 11.9.9 (*E. crebra* dominated woodland) are located on the northern side of Coral Creek and very small remnants of RE 11.4.9 (*Acacia harpophylla* woodland) are scattered on the plains. On the hilltop of the Belmore Downs section there is remnant RE 11.9.2 (*E. orgadophila* overstorey) and a small patch of RE 11.9.4 (*Acacia harpophylla* with semi-green vine thicket). The majority of the proposed lease is cleared areas of REs 11.4.9 and 11.3.29, with some regrowth of these RE's occurring.

Of the RE's mapped during the flora survey two are listed as Endangered RE's (ERE's) 11.4.9 and 11.9.4.

One conservation listed species was identified, *E. raveretiana* which is listed as vulnerable under state and federal legislation and was associated with RE 11.3.25 along Coral Creek.

Fauna

A fauna survey was conducted on the Sonoma Project lease area during September 2004 by CQU. The fauna was consistent with expectations of the area, however, species richness was less than similar surveys conducted by CQU within the Brigalow Belt.

Seventy-nine terrestrial vertebrate species were found over the spring dry season survey including one toad, 10 lizards, 59 birds, five non-microchiropteran mammals and four

microchiropteran bats. Domestic species such as cattle, horses and camels were also present.

One conservation-listed species was confirmed – the southern subspecies of the Squatter Pigeon (*Geophaps scripta scripta*) listed as vulnerable under state and commonwealth legislation.

There were three pest species found during the fauna survey, cane toads (*Bufo marinus*), rabbits (*Oryctolagus cuniculus*) and wild pigs (*Sus scrofa*)

Surface Water

Surface water of the Sonoma Project was assessed by WBM during September 2004. The Sonoma Project is situated in the Bowen-Broken River sub-catchment of the Burdekin Basin. Coral Creek, the predominant surface drainage feature of the site, is an ephemeral creek with a total catchment area of approximately 115km^2. Coral Creek is a tributary of the larger regional drainage feature, Pelican Creek. Pelican Creek joins the Bowen River some 30km downstream of the Coral Creek confluence.

Rainfall of the region tends toward being highly seasonal, with a distinct 'wet' period throughout the summer months (December to April). It is during this time, peak discharge occurs in Pelican Creek, and ephemeral flows occur in Coral Creek and surrounding tributaries. Coral Creek is thought to completely dry during the dry season, whereas Pelican Creek can contain isolated pools maintained by groundwater base flows.

There are no available water quality data for Coral Creek. Recent assessments in the wider Pelican Creek catchment demonstrate that current and past mining activities at Collinsville Mine have had localised impacts on water quality (Cullen et al, 2003). Coral Creek is situated upstream of Collinsville Mine and therefore unaffected by mining activities.

Existing data from the wider catchment indicates that water quality parameters display a high degree of spatial and temporal variability over a range of scales. This variability reflects a number of factors, most importantly being seasonal changes in flow, high rates of evaporation, and differences in local geological conditions. Products of acid mine drainage occur in tributaries of Pelican Creek, which have resulted in observations of extremely low pH. However, average pH throughout the wider catchment is circum-neutral, with a range of 7.29 to 7.97 (Cullen et al, 2003).

Groundwater

Groundwater in the area of the project was investigated by Australasian Groundwater and Environmental Consultants, (AGE) in September 2004. Groundwater is associated with coal seams and alluvial sediments within the flood plains of the watercourses of the area.

The main water bearing aquifer is associated with coal seams and is typically saline and of little exploitable value for any existing land uses in the region. The limited existing groundwater exploitation within the areas surrounding the proposed lease predominantly consists of low yield production from alluvial aquifers for stock watering purposes.

Alluvial groundwater is typically of reasonable quality and has potential use within existing land uses such as stock watering.

Initial investigations of water quality within exploration drill holes has proven inconclusive due to dilution of the groundwater associated with the coal seams by the overlying alluvial groundwater within the drill holes.

Ambient Air and Noise

An air and noise survey was undertaken at the proposed Sonoma Project during September 2004 by Parsons Brinckerhoff.

The existing air quality of the area surrounding the project is typical of a Central Queensland rural setting with the primary impacts being dust generated from cleared areas, general farming activities and bushfires.

Dust from exposed surfaces and mining activities at local coal mines is also a likely contributor to the impact, although control activities required of mining operations are employed to mitigate the potential impact.

Potential impacts from the coal fired power station at Collinsville are also a likely contributor to existing impacts on the local air shed.

The ambient noise levels near the noise-sensitive receptors are typical of a quiet rural area, with low background sound levels during the day and night, and slightly elevated average maximum sound levels during the day. Sound levels during the day are dominated by birdsong, wind in the tree/grass, insects, and some noise from farming activities. Background sound levels during the day occasionally drop below 30dB(A), and stay consistently below 30dB(A) during the night.

There are three noise sensitive receptors near the project located between two and four kilometres from the proposed main activity areas of the mine. They are: the Sonoma

homestead to the west, Belmore homestead to the south-east and the town of Collinsville to the north.

2.2 Cultural Heritage

Northern Archaeology Consultancies, (NAC) and the relevant Aboriginal Party conducted cultural heritage field surveys within the proposed lease area during 2004. A total of 47 Aboriginal archaeological sites, including 18 stone artefact scatters and 29 isolated artefact finds were located.

Many of the identified cultural heritage sites have been located on the elevated banks and terraces along Coral Creek. The archaeological record indicates that Coral Creek was a focal place for Aboriginal occupation and subsistence activities. This creek system is sensitive from a cultural heritage point of view. Some of the Coral Creek stone artefact scatters contain a high density of stone artefacts and discrete intra-site activity areas (eg: stone artefact knapping floors and hearths).

A number of cultural heritage sites have also been recorded at smaller watercourses and drainage lines in the proposed lease area, namely Belmore Gully and Two Mile Creek. Low-density stone artefact scatters and isolated artefact finds have been recorded along the low banks of these watercourses. In general, these archaeological sites tend to be less well preserved than the sites recorded at Coral Creek.

2.3 Socio-economic

The Sonoma Project is located in the Bowen shire near the townships of Collinsville and Scottville which are located adjacent to one and other. Collinsville and Scottville have a combined population of approximately 2500 and are bases for employees of Collinsville Coal who operate the Collinsville mine which is in close proximity to the towns. The Collinsville Power Station is also a major feature of the local socio-economic setting. Collinsville forms the business centre for local agricultural activities.

The township of Bowen is located approximately 85km to the east of Collinsville and has a population of approximately 9000 people. Bowen is used as a base for some employees of the Collinsville Mine and is also the major business centre for the shire. The Abbot Point Coal Terminal is located approximately 25km north of the Bowen township.

Existing rail, road and water supply infrastructure is in place to service the Collinsville, and Newlands mines and associated townships.

3 DESCRIPTION OF PROPOSED DEVELOPMENT

3.1 Operations

The proposed operations will consist of conventional open cut coal mining operations and associated infrastructure, Coal Handling and Preparation Plant, (CHPP) and rail load out facilities.

The key features of the operation include:

- Clearing of vegetation;
- Topsoil recovery and stockpiling;
- Overburden blasting;
- Overburden removal and dumping;
- Coal recovery and stockpiling;
- Coal processing and reject / tailings disposal;
- Railing product coal to Abbot Point coal terminal;
- Shipping product coal to overseas export markets; and
- Progressive rehabilitation of disturbed areas.

Infrastructure for the proposed project will include:

- Haul roads;
- Coal Handling and Preparation Plant;
- Buildings for offices, warehouse, workshops;
- Hydrocarbon and chemical storage facilities;
- Sewage treatment facilities;
- Water management structures and storages;
- Flood levees;
- Water supply infrastructure for delivery of raw water from the Bowen River supply system; and
- Electricity supply facilities.

Potential environmental impacts associated with the various facets of the operation are highlighted below. Management of the potential impacts arising from the operation are addressed in Section 4.0.

Approximately 1000 - 1300 hectares is estimated to be disturbed by mining, overburden dumps, CHPP, rail loop and other infrastructure. The disturbance process includes: vegetation clearing and topsoil stripping ahead of mining, overburden dumping or infrastructure development.

Level 1 - Environmentally Relevant Activities (ERA's) to be undertaken at the Sonoma Project include:

- 11(a) - Crude Oil or Petroleum Product Storage 10 000L or more but less than 500 000L.
- 15(a) - Sewage Treatment (21 to 100 equivalent persons).

Each of the ERA's will be located within the area of the CHPP.

Vegetation Clearing

Vegetation clearing will be required ahead of the open cut development, overburden dump development and infrastructure development. Clearing is proposed to be conducted progressively using bulldozers, with cleared vegetation piled up outside the proposed mining, overburden dump and infrastructure footprints. It is estimated approximately 1000 - 1300 hectares will be cleared of which 52% will be grasslands and shrub regrowth with the remaining 48% comprised of remnant vegetation. Of the remnant vegetation to be cleared approximately 71 hectares will be from the vegetation unit aligned with ERE 11.4.9. Of the ERE clearing 74% (53 hectares) is comprised of young regrowth. Figure 4 shows the proposed clearing areas and Table 4 describes the vegetation units and their relationship to Regional Ecosystems. The proposed clearing of the ERE has been included in the Commonwealth Referral discussed in Section 1.1. The potential impacts of vegetation clearing include:

- Visual amenity;
- Loss of cultural heritage values;
- Loss of habitat; and
- Soil erosion.

The incorporation of buffer zones into proposed mining leases will enable the protection of uncleared remnant vegetation and enhancement of regrowth developing from historic clearing.

Topsoil Stripping

Following clearing operations topsoil will be recovered using bulldozers, scrapers, trucks and loaders and either directly used on rehabilitation or stockpiled for later use. Potential topsoil stripping and stockpiling impacts may include:

- Loss of visual amenity;
- Loss of cultural heritage values;
- Dust generation;
- Water quality degradation through erosion of stockpiles and stripped areas;
- Loss of biological integrity within topsoil from poor stockpile management.

Overburden Blasting

Overburden material will be blasted using conventional techniques applied within the mining industry. Potential impacts, from blasting operations include:

- Dust generation;
- Vibration; and
- Overpressure (Noise).

Overburden Removal and Dumping

To enable access to coal, blasted overburden requires removal as a waste material. The proposed method for removal of overburden will be a conventional truck and shovel operation. Material will initially be dumped out of pit in geotechnically designed dumps and also be used for flood levee bank construction. Approximately 40 to 50 million cubic metres of overburden will be dumped out of pit and will cover approximately 260 hectares. As sufficient in pit volume becomes available, remaining waste overburden material will be backfilled into the mined areas of pits. Total pit disturbance including backfilled areas and residual void will account for approximately 340 hectares.

Potential impacts from the overburden removal and dumping operations for consideration include:

- Visual amenity impacts resulting from landform changes;
- Loss of cultural heritage values;
- Impacts arising from geotechnical instability of the created landforms;
- Erosion of landforms;
- Impacts to water quality originating from dumped materials;
- Impacts to habitat (flora and fauna) values and conservation significance; and
- Impacts to land use values.

Coal Recovery and Stockpiling

Coal will be recovered from the pit following exposure by the overburden removal process. Coal will be loaded by excavator into mining trucks for transport, either directly to the stockpiles at the CHPP or, to intermittent ROM stockpiles located out of pit prior to reloading and transport to the CHPP.

Potential impacts arising from the coal extraction, transport and stockpiling process, includes:

- Visual amenity impacts;
- Noise generation;
- Dust generation; and
- Spontaneous combustion.

Coal Processing

ROM coal will be processed using a conventional dense medium cyclone/spirals/flotation processing plant that will be erected on site. Product coal recovery is expected to be around 75% with residual reject and tailings to be disposed of within containment structures located in the proposed lease areas.

Potential impacts resulting from construction and operation of processing facilities include:

- Visual amenity impacts;
- Loss of cultural heritage values;
- Noise Generation;
- Dust Generation;
- Impacts associated with geotechnical instability of process waste containment structures;
- Impacts to water quality;
- Impacts to habitat (flora and fauna) values and conservation significance;
- Impacts to land use values; and
- Impacts to the raw water resource of Bowen River Supply System.

Railing

Processed coal will be stockpiled prior to loading into trains for transport to the Coal Shipping terminal at Abbot Point. A rail loop will be constructed on site to link with the adjacent Newlands rail corridor.

Potential impacts from railing operations include:

- Visual amenity impacts;
- Noise generation;
- Dust generation; and,
- Water quality impacts.

3.2 Alternatives Considered

Alternatives to the above proposal have been considered including:

- Do Nothing;
- Project Delay; and
- Alternate mining technologies.

Do Nothing

International demand for the coal products which Sonoma will produce is currently strong and is expected to remain so in the foreseeable future. As a result a supply / demand

imbalance for coking coal is developing within the Queensland industry. Should the project not progress, consequent flow on effects may include foreign coal customers sourcing product from other coal producing countries thus depriving Queensland of the employment opportunities, infrastructure development, royalties, etc that would result from the development of the Sonoma deposit, plus potentially create a negative impact to the Queensland and Australian trade relationships. Development of the Sonoma Project will improve the supply / demand imbalance in the Queensland Coal Industry and contribute to avoidance of the potential flow on effects discussed above.

Following the identification of the coal resource, the “do nothing” alternative, would be in inconsistent with Guiding Principles Four and Five of the National Strategy for Ecologically Sustainable Development.

Project Delay

Similar outcomes apply to this alternative as apply to the "do nothing" alternative.

Alternative Mining Technologies

The potential for alternative mining technologies have been considered including development as an underground mine and opencut dragline method. Due to the geological nature and size of the identified deposit and the proposed mining rates, open cut operations utilising truck and shovel methods have been selected as the most applicable and efficient method of recovering the resource.

In comparison to dragline methods, truck and shovel operations offer substantial benefits in the development of the resource and overburden dumps. Truck and shovel methods allow for flexible mining which is required in the case of the Sonoma resource as it presents some geologically challenging scenarios. Truck and shovel operations allow selective placement of potentially problematic (physically or chemically) overburden materials and the progressive development of the landforms. These factors facilitate progressive rehabilitation of overburden dumps.

3.3 Infrastructure Demands

On site support infrastructure will be constructed to service the requirements of the operation, such infrastructure includes:

- Workshops;
- Offices;
- Warehouse;
- Hydrocarbon and chemical storages;
- Roads for access and coal haulage;
- Electricity facilities;

- Raw water supply and storage facilities;
- Mine water management structures;
- Sewage treatment plant; and
- Coal reject and tailings handling and storage.

Construction and operation of these facilities has the potential to impact the environment through:

- Visual amenity impacts;
- Loss of cultural heritage values;
- Noise Generation;
- Impacts to land values;
- Impacts to conservation values;
- Pollution of the environment by waste materials;
- Water quality degradation and land contamination resulting from release of hydrocarbons, chemicals and poor quality water;
- Dust generation from road usage;
- Release of sewerage effluent to the environment; and
- Inefficient use of raw water resources within activities associated with support infrastructure.

Demands on regional infrastructure will include:

- Supply of up to 1500ML of raw water from the Bowen River Supply System via the pipeline running adjacent to the proposed lease;
- Supply of power from the State Electricity Grid;
- Increased railing movements on the Newlands, Abbot Point line;
- Increased vehicle movements on shire roads by suppliers of goods and services and private vehicle owners; and
- Increased ship movements at Abbot Point.

3.4 Effluent, Solid Wastes, Air Emissions and Noise

Potential impacts to the receiving environment from the proposed operations include impacts resulting from emissions of waste water, sewage effluent, solid waste, air contaminants and noise sources.

Waste Water and Effluent

The primary sources of potential waste water and effluent emissions include mine water, processing waste water, sediment laden runoff and sewage treatment effluent. Mine water and processing waste water will be contained on site for reuse as discussed in section 4.0. Sewage treatment effluent will be contained on site for potential reuse or disposal via

evaporation. Therefore the volumes of waste water and effluent expected to be released to the environment are negligible.

Solid Waste

Process wastes including overburden, tailings and rejects will be managed as described in section 4.0. Non process wastes generated on site will be managed according to strategies outlined in section 4.0. Consequently release to the surrounding environment of solid wastes is expected to be negligible.

Air and Noise

The operations will produce noise and potential air emissions. The key air emission is likely to be dust.

Results of the air quality and noise survey undertaken for the project indicate that the predicted noise levels from mine operations are likely to be audible but not intrusive at the Sonoma and Belmore homesteads and at the town of Collinsville.

The air quality and noise survey indicates that air emissions are likely to be limited to dust. Given the separation distances to the nearest potentially affected receptors, and the dust management measures that would be initiated, minimal potential for adverse cumulative air impact issues is expected. The air quality in the area is not expected to be significantly impacted by the project.

3.5 Transport

The project will utilise the Newlands rail corridor to transport coal to the Abbot Point shipping facilities. Based on typical train size of 4700 tonnes (Source: Queensland Rail) existing rail traffic will increase by approximately eight trains per week. Shipping movements will increase in the order of 20 ships per year based on an average load of 100,000 tonnes (Source: Queensland Ports Corporation web page).

Existing road infrastructure will be utilised to provide access to the site by suppliers and employees. Based on experiences at comparable minesites in the Bowen Basin an additional 2-3 semi trailers per day would be expected to utilise the Bowen to Collinsville road. The frequency of semi trailers servicing the project will vary depending on the phases of the project, such as: construction, standard operation, shutdowns, etc. Additional light vehicle traffic is also likely increase as a result of project employee movements in the region. Light vehicle traffic conditions in the area are expected to be similar to those experienced during the operational life of the Pipeline Mine. Due to the reasonable trafficability of the major roads in the shire, the road traffic generated by the Sonoma Project is not expected to significantly impact the road network or existing users.

3.6 Physical Alteration of the Area

Disturbance of the area by the proposed mining operations are discussed throughout section 3. The primary alterations to the post mining landform will be:

- Elevated sections of rehabilitated overburden dumps;
- Residual void; and
- Minor alterations to upper catchment tributaries.

4 ENVIRONMENTAL MANAGEMENT STRATEGIES

Management of the potential impacts arising from the operation, as highlighted throughout section 3, will be addressed in the Environmental Management Plan, (EM Plan) that will be developed as part of the approval process for the operation.

The significance of potential impacts and the level of confidence for managing such impacts are able to be predicted based on existing technology and proven practices within the Queensland Mining Industry.

Development of management strategies within the EM Plan will consider relevant industry and government policies, standards and guidelines. The EM Plan will propose measurable criteria that will consequently form the basis of the Environmental Authority, (EA) and provide an environmental compliance auditing platform.

All strategies will regularly be reviewed and where appropriate modified consistent with the principles of continuous improvement.

Environmental awareness training will be delivered to all staff and contractors to ensure that environmental management strategies and requirements are understood.

Some of the key strategies to be developed in the EM Plan include:

<u>Water Management:</u>

Water management strategies will focus on the management of clean surface runoff, mine water and imported raw water. The primary objectives of water management will be to:

- Separate and divert clean water wherever possible allowing it to naturally flow to existing drainage systems;
- Contain mine water in constructed storage facilities for reuse in mining and processing operations, discharging to surrounding water courses only under

controlled conditions when storages are near capacity and operational requirements are limited;
- Measure raw water usage and implement conservation strategies to reduce reliance on the resource; and
- Monitor water quality and quantity and assess results to determine performance of management systems and impacts to the receiving environment.

Process Waste Management:

Management of waste overburden material produced during the mining process will involve the below components:

- Characterisation of the materials to determine if special management requirements are necessary (such as encapsulation within dumps for potentially acid producing material);
- Overburden dump design considering geotechnical stability, erosional stability and final landform criteria;
- Regular monitoring of dump integrity;
- Re-contouring of overburden dumps; and
- Rehabilitation of dumps.

Management of tailings and rejects to minimise potential impacts of process waste disposal will include:

- Calculation of required disposal volumes;
- Detailed design and construction of waste storage facilities accounting for geotechnical stability;
- Development and implementation of operational practices to ensure efficient use of the facilities; and
- Waste facility decommissioning and rehabilitation.

Rehabilitation:

Rehabilitation of areas disturbed by mining activities will be undertaken progressively throughout the operation. Post mining rehabilitation of infrastructure areas (where infrastructure is not required by post mining landholders), will be completed following cessation of the operations. The rehabilitation strategy will include the below components:

- Determination of the desired post mining land use(s) through stakeholder consultation and land suitability assessments, including consideration to agriculture, native ecosystem and fauna conservation;
- Development of landform criteria;
- Recontour areas to comply with landform criteria;
- Prepare the surfaces of landforms (topsoil application, drainage control);
- Apply seed mix and fertiliser (if required);

- Monitor rehabilitation progress and develop success indicators; and
- Maintain rehabilitation areas where required.

At this early stage of project planning it is expected that the post mining land use will consist of a combination of grazing and nature conservation. Key features of the post mining landform will be:

- Areas remaining at pre mining topography;
- Elevated landforms resulting from overburden dumping and associated rehabilitation;
- Final Void resulting from the mining operations;
- Dams and other water management structures remaining at request of the post mining landowner; and
- Other infrastructure remaining at request of the post mining landowner.

Waste Management:

Strategies for management of non process waste materials will involve separation of wastes into designated waste streams and direction to appropriate end use/ disposal option considering the waste management hierarchy as defined in Environmental Protection (Waste) Policy 1997, Waste strategies include:

- Recycling of scrap steel and other economic metals;
- Recycling of waste hydrocarbon and chemical products;
- Recycling of clean recyclable wastes, such as plastics, glass, aluminium and paper products;
- Regulated waste disposal (including tyres) consistent with requirements of the Queensland Environmental Protection Regulations (1998);
- Disposal of non recyclable general wastes to licenced landfills;
- Tracking of waste movements; and
- Utilisation of licenced waste management contractors and receiving facilities.

Hydrocarbon and Chemical Storage and Handling:

The storage and handling of hydrocarbon and chemical products will be in accordance with relevant Australian Standards, and Guidelines, and will include the following controls:

- Bunding around storage areas to contain any spilled products;
- Training of personnel in best practice storage and handling methods;
- Use of up to date technologies in handling practices (eg: auto shut off nozzles); and
- Maintenance of a register for chemicals used on the site.

Air Quality:

Management of potential air quality impacts from the proposed operation will involve:

- Road and active overburden dump watering for dust suppression;

- Coal stockpile management for dust suppression and spontaneous combustion management; and
- Equipment maintenance to ensure efficient operation and consequent emission minimisation.

Noise and vibration:

Management of potential noise and vibration impacts from the proposed operation will involve:

- Appropriate blast design;
- Equipment maintenance within manufacturers specifications to ensure efficient operation;
- Additional noise mitigation measures such as guarding, enclosure of noise sources etc…; and
- Plant design to appropriate noise standards.

Cultural Heritage:

Management of cultural heritage values will involve the following strategies:

- Conduct Cultural Heritage Surveys in consultation with relevant indigenous groups;
- Development of a Cultural Heritage Management Plan (CHMP) for the operation. The CHMP will include:
    - Requirement for a Cultural Heritage Committee to be established;
    - Monitoring of clearing and topsoil stripping operations for potential sub surface artefact exposure by suitably qualified personnel;
    - Salvage of artefacts in the area to be disturbed by mining;
    - Protection of identified sites outside the active mining area; and
    - Employee training requirements.

5 POTENTIAL SOCIO-ECONOMIC IMPACTS

Construction and operation of the proposed Sonoma mine will have socio-economic impacts, both positive and negative on the surrounding landholders, local community, regional community and greater Queensland population.

5.1 Potential Community Concerns

Experience within the Queensland Mining Industry has shown that issues such as shift rosters, use of contract labour and impacts to local infrastructure and services, such as roads, schools, housing, etc present potential concerns for local community groups. These concerns will be addressed through the EIS process and the consultation process outlined in Section 6.0.

5.2 Economic Benefits

The proposed Sonoma Project will bring direct economic benefits to the local and regional community through provision of direct employment (approximately 200 construction and 110 operational personnel) in mining and associated activities and increased opportunities for local and regional businesses as a result of the increased employment. Indirect employment opportunities will also be created within support service provider businesses.

Experience at other mines in the region indicates that contractors prefer to employ local people and provide training when local people may not have the requisite level of skills. This will create local job opportunities in an area dependent on the mining industry for employment.

Suitably qualified and competitive local tradespersons and local businesses will be given priority for supply of goods and services to the project.

The State Government will also benefit directly from the proposed project, through increased revenue from royalties, and income from state owned businesses associated with the project such as Queensland Rail and Abbot Point Coal Terminal and also through increased State export earnings generated by the project.

Management of the socio-economic impacts will be achieved primarily through a consultation process, as discussed in Section 6.0.

6 CONSULTATION

To enable socio-economic and environmental impacts, perceived and real, to be adequately addressed the proponent is committed to a detailed consultation process including Affected and Interested persons and organisations as identified in Tables 2 and 3.

A detailed Community Consultation Plan has been developed for the approvals phase of the project. The consultation process has commenced at a local community and regulatory body level and will be continued during the EIS development phase to incorporate the remaining parties identified in Tables 2 and 3.

Components of the consultation programme include:

- One on one correspondence with key stakeholders;
- Meetings with key referral agencies involved in the EIS process;
- Public information sessions;
- Advertising in newspapers;
- Information Bulletins;
- Establishment of a readily available project contact;
- Public display of Initial Advice Statement, (IAS);
- Public display of Draft Terms of Reference, (TOR);
- Public display of Draft EIS Documentation; and
- Continued ongoing consultation with stakeholders during the construction and operational phases to ensure unforseen issues are rapidly identified and managed.

7 MONITORING RESEARCH AND REPORTING

Programmes to monitor performance and progress of strategies will be developed as an integral part of operations. Performance monitoring of management strategies will provide information for review and improvement of the strategies and also identify potential areas for research into new technologies.

Routine Monitoring programmes for the proposed Sonoma Project will include:

- Complaint Monitoring
- Water quality monitoring;
- Water quantity monitoring
- Rehabilitation Monitoring;
- Waste Tracking; and
- Environmental Auditing.

Complaint monitoring will provide triggers for incident monitoring of potential impacts such as air and noise quality.

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