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# New Saraji Coal Mine Project



## Initial Advice Statement

Voluntary EIS and Environmental Authority Applications

October 2007



# **New Saraji Coal Mine Project**

## **Initial Advice Statement**

**Voluntary EIS and EA Applications  
(Queensland)**

**&**

**EPBC Referral Application  
(Commonwealth)**

**October 2007**

## Contents

<b>1. Introduction</b>	<b>5</b>
1.1 Project Background and Location	5
1.2 Proponent	5
1.3 Project Environmental Impact Assessment	5
1.4 Purpose and Scope of the Document	6
<b>2. Project Description</b>	<b>8</b>
2.1 The Resource	8
2.2 New Saraji Coal Mine Project Description	8
2.2.1 Mining	8
2.2.2 Coal Preparation and Handling	10
2.2.3 Infrastructure Requirements	10
2.3 Project Tenure	11
2.4 Project Access	12
2.5 Project Investment and Significance	12
2.6 Project Approvals	12
2.7 Environmentally Relevant Activities & Notifiable Activities	13
2.8 Project Consultants	13
<b>3. Affected and Interested Persons</b>	<b>16</b>
3.1 Affected Persons	16
3.2 Interested Persons	17
3.3 Consultation	18
<b>4. Existing Environment, Potential Impacts and Environmental Management Strategies</b>	<b>19</b>
4.1 Surface Water	19
4.2 Groundwater	19
4.3 Land Resources	20
4.4 Regional Ecosystems	21
4.5 Flora	22
4.6 Fauna	24
4.7 Noise, Vibration, and Air Quality	25
4.8 Greenhouse Gases	25
4.9 Infrastructure Impacts	26
4.10 Visual Amenity	26
4.11 Cultural Heritage Values	26
4.12 Socio-Economic Conditions	26
4.13 Environmental Management	27
<b>5. Contact Details</b>	<b>28</b>
<b>6. References</b>	<b>29</b>

## Tables

<b>Table 1: Regional ecosystems and their conservation status</b>	<b>21</b>
<b>Table 2: Potential rare and threatened plants species that occur near the Project area and their current EPBC status</b>	<b>22</b>
<b>Table 3: Threatened fauna species and their current EPBC status</b>	<b>24</b>

## Figures

<b>Figure 1: New Saraji Deposit - Location Plan</b>	<b>7</b>
<b>Figure 2: New Saraji Deposit – Moranbah Coal Measures Stratigraphy</b>	<b>9</b>
<b>Figure 3: Land and Mining Tenure</b>	<b>15</b>
<b>Figure 4: Mining Lease Application</b>	<b>15</b>
<b>Figure 5: EPA ERE Map for EPC 837</b>	<b>23</b>

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## Abbreviations

BBC	Bowen Basin Coal Pty Ltd
BMA	BHP Billiton Mitsubishi Alliance
CHPP	Coal Handling and Preparation Plant
DEWR	Department of Environment and Water Resources (Commonwealth)
EA	Environmental Authority
FIS	Environmental Impact Statement
EP Act	<i>Environmental Protection Act 1994</i>
EPA	Environmental Protection Agency (Queensland)
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
FPC	Exploration Permit Coal
EPP	Exploration Permit Petroleum
ERE	Endangered Regional Ecosystem
Mt	Million tonnes
NHCL	New Hope Corporation Limited
NHE	New Hope Exploration Pty Ltd
NSC	New Saraji Coal Pty Ltd
NSW	New South Wales
QLD	Queensland
RE	Regional Ecosystem
ROM	Run of Mine
VMR	<i>Vegetation Management Regulation 2000 (Queensland)</i>

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## 1. Introduction

### 1.1 Project Background and Location

New Saraji Coal Pty Ltd (NSC), a subsidiary company of New Hope Corporation Ltd (NHCL), proposes to develop and operate New Saraji Coal Mine (Project) approximately 10 kilometres northeast of Dysart and approximately 130 kilometres northeast of Emerald in central Queensland (Figure 1).

The Project will involve the development and operation of a new multiseam longwall underground mine and associated on-site infrastructure to produce up to 5 million tonnes per annum of coking coal products for Australia's export market. Production from the Project is expected to commence in 2011 and extend for approximately 40 years.

The Project site is located within the Broadsound Shire. The primary land uses in the vicinity of the Project are mining and agriculture (grazing). The Project will connect to the existing rail network which will allow transport of the coal to the established coal loading ports of Dalrymple Bay near Mackay, Abbott Point near Bowen, and Gladstone.

### 1.2 Proponent

NSC's parent company, NHCL (also known as New Hope Coal Australia), currently operates two open cut mines in southern Queensland – New Acland Coal Mine near Oakey on the Darling Downs and New Oakleigh Coal Mine near Ipswich.

NHCL is an independent Australian company, publicly listed on the Australian Stock Exchange. NHCL has been in operation for over 50 years and possesses direct interests in coal mining, port operations, real estate, and other energy resource based activities in Queensland.

NHCL's mines contribute substantially to the economy of Queensland and its communities through income, employment, use of external businesses and payments to the Queensland government and government-owned corporations. The estimated net contribution to State Product from NHCL's operations is significant in terms of capital expenditure and employment opportunities. This economic contribution will increase as a result of NSC's Project.

### 1.3 Project Environmental Impact Assessment

NSC will submit a Voluntary Environmental Impact Statement (EIS) and Environmental Authority (EA) Application under Queensland's *Environmental Protection Act 1994* (EP Act) and a Referral Application under the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) to ensure an adequate level of environmental impact assessment and public consultation is conducted in relation to the Project.

NSC believes the proposed level of environmental impact assessment is commensurate with the scale and nature of the Project. The Queensland Environmental Protection Agency (EPA) and the Commonwealth Department of Environment and Water Resources (DEWR) are the main government agencies responsible for assessment of the Project's potential impacts (i.e. under their respective Acts). As a Queensland base project, other Queensland government departments will assist with the EIS assessment process as advisory bodies in their areas of expertise and regulation.

#### **1.4 Purpose and Scope of the Document**

This Initial Advice Statement has been prepared for the Project to provide sufficient supporting information for:

1. the Queensland EPA to assess Voluntary EIS and EA Applications under Queensland's EP Act; and
2. the Commonwealth DEWR to assess a Referral Application under the Commonwealth's EPBC Act.

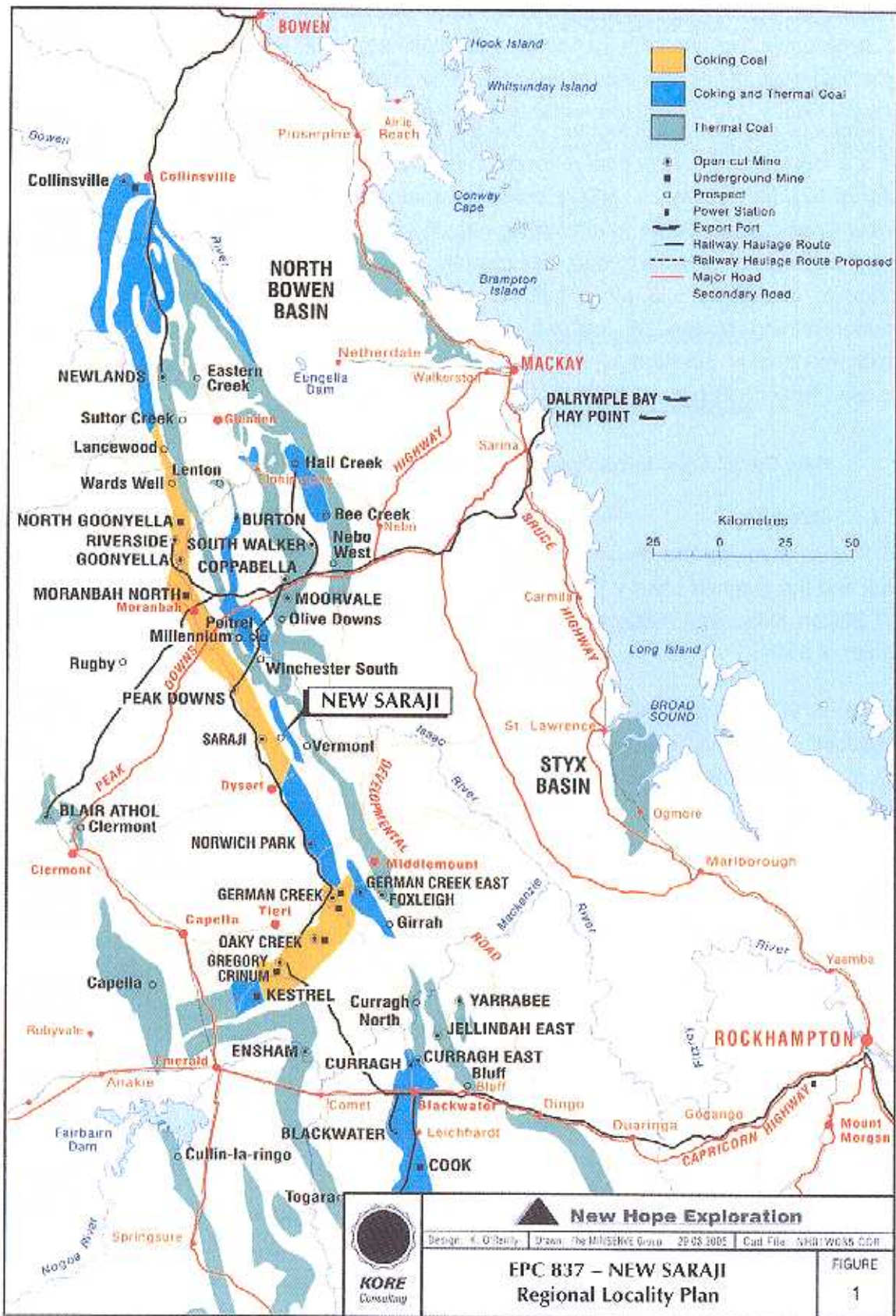


Figure 1: New Saraji Deposit – Location Plan



## **2. Project Description**

### **2.1 The Resource**

The Project's coal deposit is located within the Moranbah Coal Measures of the Bowen Basin and is a high quality coking coal resource with a current estimated 'inferred resource' status (Jorc) of 678 Mt (Figure 2). NSC's proposed underground mine plan will initially target the Harrow Creek Upper Seam (main mining objective). The Main Dysart Seam is a secondary mining target and may be mined concurrently at a later date depending on geotechnical, economic, marketing and other factors. Future underground mine planning may also consider mining of the P8 and Upper Dysart Seams. NSC will continue geological investigations over the next 12 months to prove up the mineable coal resource within the proposed Project area to an 'indicated resource' status (Jorc).

### **2.2 New Saraji Coal Mine Project Description**

#### **2.2.1 Mining**

The Project involves the development of an underground coal mine between the existing Saraji and the planned Lake Vermont open cut coal mining operations which are operated by BHP Billiton Mitsubishi Alliance (BMA) and Bowen Basin Coal Pty Ltd (BBC), respectively (Figures 3 & 4).

Current mine plans provide for production to commence in 2011 following an initial mine construction and development period of approximately 24 months. A maximum production rate of up to 9 million Run-Of-Mine (ROM) tonnes per annum is currently planned. Expansion of production equipment facilities may be undertaken over the life of the project to facilitate multiseam extraction for marketing purposes. Production levels will be further refined and updated in the future as NSC's exploration program progresses and the Project's feasibility study is completed.

Multiple underground access (workforce and ROM coal return) through drifts/declines and shafts and lateral tunnel systems will be established to facilitate the proposed longwall mining process and ensure ventilation is adequate. Issues such as coal seam methane gas, groundwater and spontaneous combustion will be closely monitored and appropriately managed to ensure safe operation of the Project. For example, coal seam methane gas and/or groundwater may be required to be drained and captured using a network of bores ahead of the mine path.

NSC is currently evaluating the most cost effective and efficient designs for mine access (drift locations) and resource extraction (longwall layout) as part of the feasibility study. Access to the target coal seam using an initial open cut operation is also being evaluated on a cost-benefit basis.

NSC's underground mining operations will predominantly use longwall mining methods to extract the coal. To maximise resource recovery and satisfy marketing requirements, it is envisaged that there may be some areas of the Project's coal deposit that will be mined using bord and pillar methods. The Project's coal extraction will initially occur from the main single seam, and depending on identified constraints, will eventually progress to a multiseam operation.

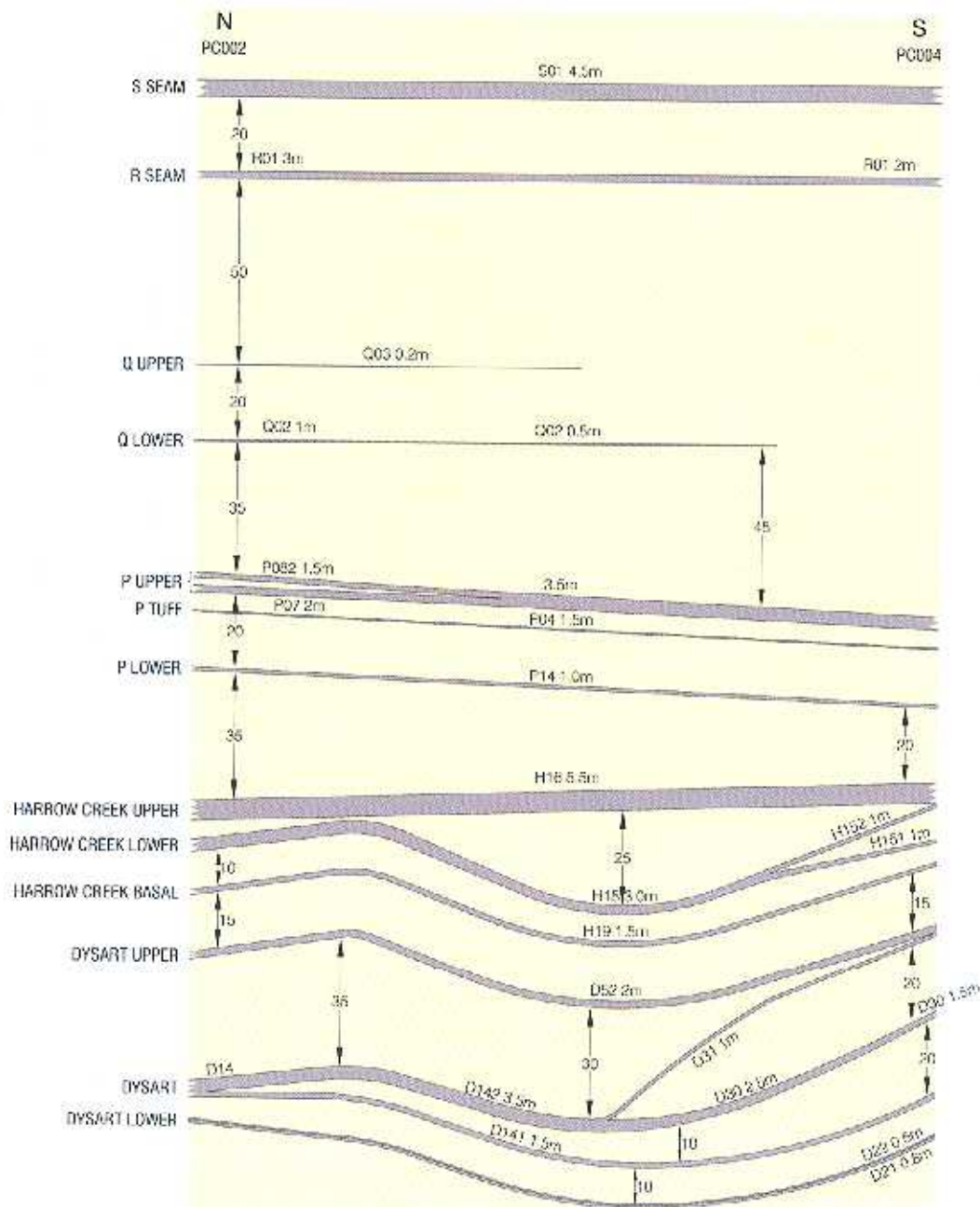


Figure 2: New Saraji Deposit – Moranbah Coal Measures Stratigraphy (O’Rielly 2006)

Currently, NSC is evaluating the possibility of using a specific longwall mining technique called 'longwall top coal caving' to improve coal recovery rates. This mining technique was developed in France more than 20 years ago and was further refined by China to maximise recovery from thick seams. The mining method is new to Australia and is presently only practiced by the Austar Coal Mine in the Hunter Valley, New South Wales. Standard longwall mining techniques are also under consideration by NSC.

Coal product mined by the longwall operation will be delivered to the surface via conveyors for transfer to a raw coal stockpile and eventual delivery to a Coal Handling and Preparation Plant (CHPP).

### **2.2.2 Coal Preparation and Handling**

A CHPP for coal processing and a co-disposal facility for containment of the CHPP's joint waste streams (coarse rejects and fine tailings) will be required by the Project.

The CHPP's infrastructure will comprise a ROM pad, ROM coal delivery system, coal washery module, coal waste delivery system (tailings and coarse rejects), clean coal delivery system, clean coal stockpile, offices and workshops. The CHPP will be a system suitably sized to accommodate a maximum coal throughput of up to 9 Mtpa (ROM) (with potential to expand over the life of the operation to suit underground production). Key issues for the operation of the CHPP and evaluation by NSC are product and waste management, water supply and water recovery/recycling.

NCS is examining other options for the CHPP, such as sharing infrastructure with other nearby mines and choice of a final location (i.e. near the underground entrance or near the rail loadout facility). The final CHPP option will influence the Project's ROM and product coal conveyor requirements.

Long term management of the Project's co-disposal waste, including proposed rehabilitation methods, are under investigation by NSC.

### **2.2.3 Infrastructure Requirements**

Site infrastructure will include offices (administration, lunch room, bath house, etc.), underground access and ventilation infrastructure, sewage and potable water treatment plants, a CHPP (and associated infrastructure), a co-disposal storage facility, roads, a fuel farm, a workshop/warehouse, wash bays, equipment lay down pad, environmental dams, and other water management structures (e.g. diversion drains, etc.).

Power supply investigations will examine network/grid supply specifically looking at the issues of new infrastructure and any upgrade requirements and alternative supply arrangements. A 132kV power line currently runs across the Project Site providing a potential access point to the grid for the Project (i.e. subject to negotiations with Powerlink). NSC will also investigate the potential for producing supplemental power on site using methane released by the coal seams (i.e. either by a direct drainage system or mine ventilation output).

Product coal will be conveyed to a product stockpile and reclaimed by vibrating stockpile reclaimers within a reclaim tunnel. The train loadout conveyor and volumetric loadout bin will be sized to suit Queensland Rail's loading requirements. NSC is exploring its potential rail options.

Product coal will be transported off site for export using existing rail links and port facilities. NSC has commenced preliminary negotiations with Queensland Rail for access to the rail network and with Ports Corporation for access to port facilities. The Project's coal production is planned to synchronise with future rail and port availability.

Preliminary studies have identified a significant underground water aquifer which may be sufficient to support the Project's water requirements for all mining and associated activities. The feasibility of this potential water source remains the subject of further investigation.

An alternative water supply also under investigation is the Moranbah water pipeline which runs across the Project site. Access to this water source is subject to negotiations with SunWater.

NSC is investigating the possible use of a construction camp during the development phase of the Project.

During the operational phase of the Project, the majority of the workforce is expected to be housed in Dysart and surrounding areas. Other workforce arrangements are under examination by NSC (e.g. fly in/fly out, etc.). Workforce management will be an important issue for the Project. The increased labour demand caused by the current mining boom and the current skills shortage are exacerbating the issue.

### **2.3 Project Tenure**

The Project and surrounding tenure details are presented in Figure 3. The Project area lies within Exploration Permit Coal (EPC) 837 controlled by NSC's sister company, New Hope Exploration Pty Ltd (NHE).

During October 2007, NSC and NHE will submit a Mining Lease Application under the *Mineral Resources Act 1989* (Figure 4) and Voluntary EIS and EA (mining activities) Applications under the EP Act. During the EIS process, NHE will assign its ownership of the Mining Lease Application under the *Mineral Resources Act 1989* to NSC and withdraw its applicant status on the Voluntary EIS and EA Applications under the EP Act. This process will ensure the Project is wholly owned and operated by NSC.

The property tenure within EPC 837 is freehold. NSC has commenced negotiations with the applicable landowners for acquisition of the key properties within the Project area. NSC may also seek compensation arrangements under the *Mineral Resources Act 1989* for access to the Project site (i.e. based on the proposed mine plan and property boundary locations).

As previously explained, there are number of existing utility easements within the proposed Project area – power (Powerlink) and water (SunWater). NSC will consult with the owners of these utilities over possible access arrangements and future management issues for the Project.

Enertrade is also proposing to locate the Moranbah to Gladstone gas pipeline through the proposed Project site and is currently awaiting release of the Coordinator General's report on the gas pipeline's EIS. NSC is in discussion with the Coordinator General/Department of Infrastructure, Enertrade and BBC over the possible re-location of the proposed gas pipeline to a new route that is suitable to all parties involved and does not significantly sterilise any of Queensland's coal reserves.

## **2.4 Project Access**

NSC will access the Project site via the Lake Vermont Road which connects to the Peak Downs-German Creek Road and traverses BMA's Saraji Coal Mine (Figure 3).

NSC may gain secondary access to the Project site off the access road to BBC's Lake Vermont Coal Mine which connects to the Dysart Connection Road.

## **2.5 Project Investment and Significance**

The preliminary estimate of the capital cost to take the Project to full production is approximately AUD \$1 billion. The Project is expected to contribute significantly to the local and State economies through the multiplier effect of associated mining related expenditure, investment, employment and opportunities for external support businesses.

At full production the Project will directly employ approximately 300 people. Apart from direct employment, many more people will be employed indirectly as a result of multiplier (flow-on) effects. For example, contractors may be used on site for specific tasks (e.g. maintenance).

The construction phase will involve establishment of the surface and underground infrastructure, and as discussed, is expected to take approximately 24 months. The construction phase will provide opportunities for local employment in construction, transport, and the supply of goods and services. The construction workforce is expected to peak at approximately 1000 people.

## **2.6 Project Approvals**

NSC will require a Mining Lease under Queensland's *Mineral Resources Act 1989* (Figure 4) and an EA under Queensland's EP Act. NSC may also require an approval for a Controlled Action under the Commonwealth's EPBC Act and possible approval to disturb a water course under Queensland's *Water Act 2000*. NSC will require agreements/approvals from the appropriate authorities for rail, water supply, power and port access, and possibly for certain construction and maintenance activities.

## 2.7 Environmentally Relevant Activities & Notifiable Activities

### Environmentally Relevant Activities

NSC may require the following 'environmentally relevant activities' (ERA) for the Project (i.e. as prescribed by Queensland's *Environmental Protection Regulation 1998*).

- Environmental authority (mining activities) for a level 1 mining project (ROM production >500,000 per year).
- ERA 11 Petroleum or crude oil storage.
- ERA 15 Sewage treatment.
- ERA 18 Power Station.

### Notifiable Activities

The Project may possess the following 'notifiable activities' (i.e. as defined by Queensland's EP Act).

- Notifiable Activity 24 Mine wastes.
- Notifiable Activity 29 Petroleum product or oil storage.

## 2.8 Project Consultants

Sinclair Knight and Merz (SKM) has been commissioned by NSC for the Project to assist with environmental baseline and engineering studies, and compilation of the EIS and Supplementary Report. Mine Subsidence Engineering Consultants has been engaged as specialists for the modelling of mine subsidence. On an as required basis, other specialist consultants may be engaged to assist with specific Project issues.

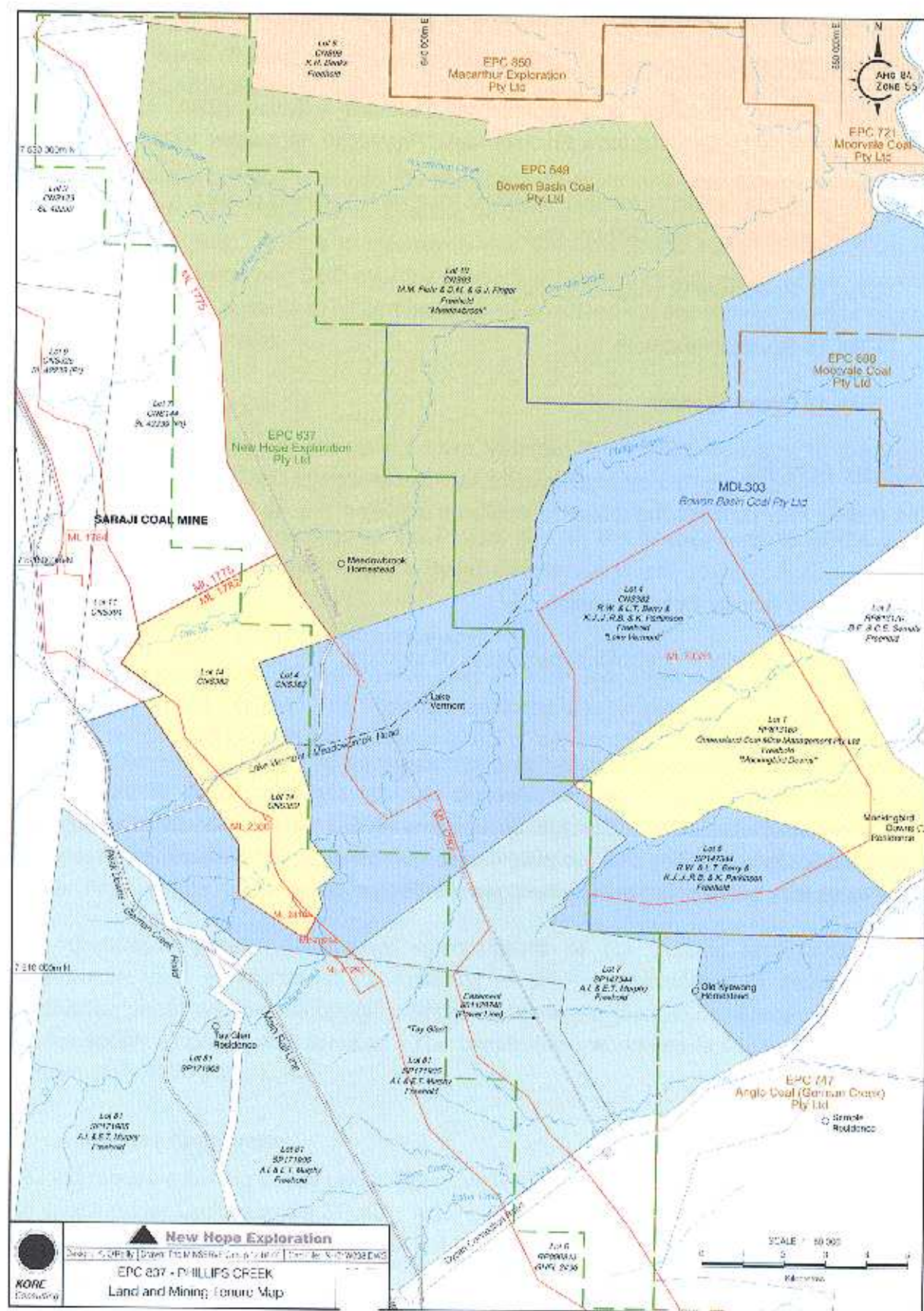


Figure 3: Land and Mining Tenure

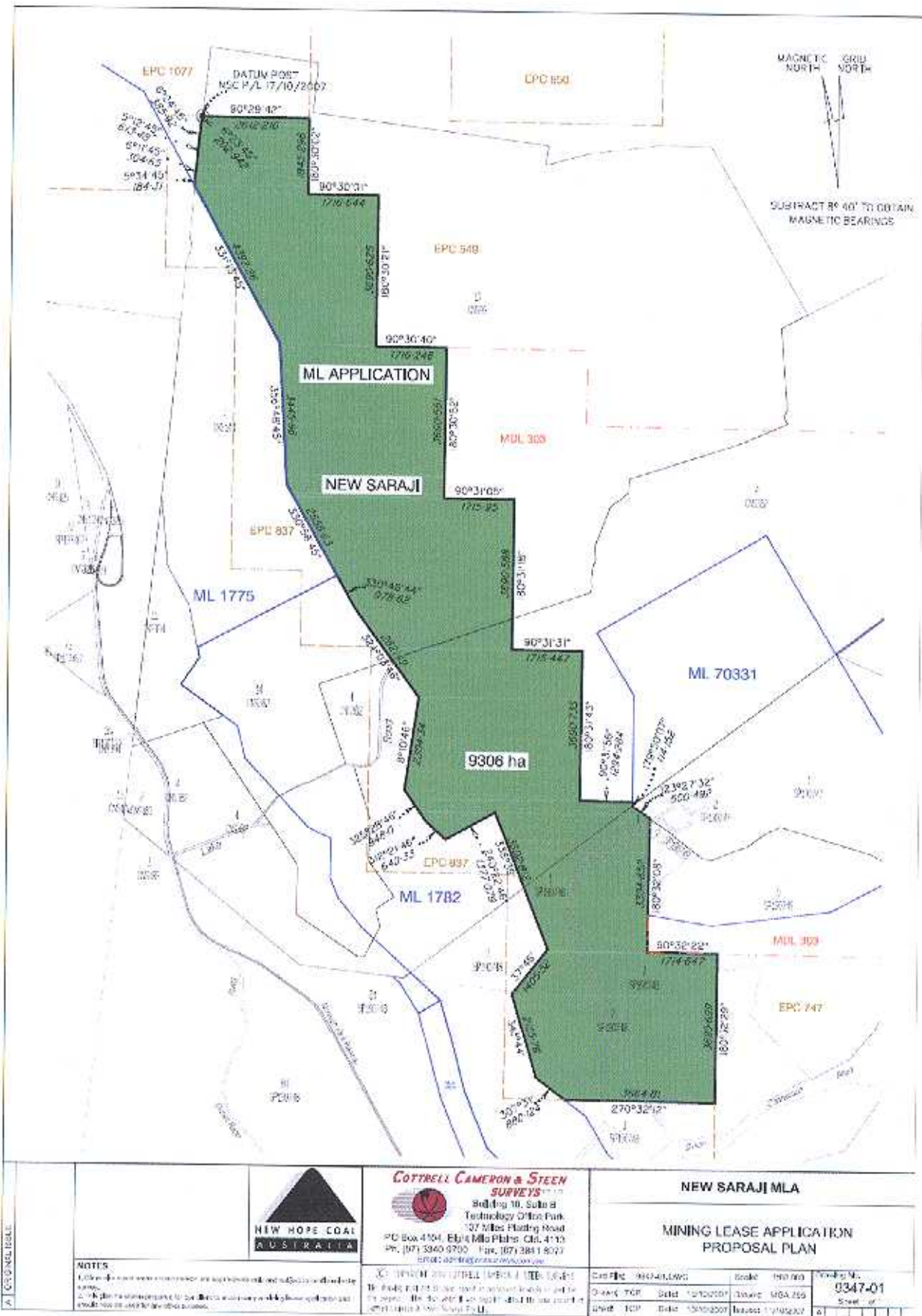


Figure 4: Mining Lease Application



### 3. Affected and Interested Persons

#### 3.1 Affected Persons

<b>Landholders</b>	
Berry and Parkinson Freehold Lake Vermont Property – (Lot 4 on CNS382, Lot 1 on SP190749, Lot 2 on SP190749, Lot 5 on SP190749)	RW and LT Berry & KJ, JR. RB and K Parkinson PO Box 77 DYSART QLD 4745
Murphy Freehold Tay Glen Property – (Lot 81 on SP190748, Lot 7 on SP190748)	Al and ET Murphy "Tay Glen" PO Box 68 Dysart QLD 4745
Flohr and Finger Freehold Meadowbrook Property – (Lot 10 on CNS93,)	MM Flohr & DM and GJ Finger "Meadowbrook" Lake Vermont Road Dysart QLD 4745
Bowen Basin Coal Pty Ltd (Lot 1 on SP190748, Lot 2 on SP190748)	GPO Box 374 BRISBANE QLD 4001
<b>Local Council</b>	
Broadsound Shire Council	PO Box 1 ST LAWRENCE QLD 4740
<b>Native Title Claimants</b>	
Native Title Claimants - The Barada Barna Kabalbara & Yetimarla People (contactable through the Central Queensland Land Council, Mackay)	Frank Budby Lot 1 Powells Road FARLEIGH QLD 4740
<b>Utilities</b>	
SunWater	Level 9 120 Edward St BRISBANE QLD 4001
Powerlink	PO Box 1193 VIRGINIA QLD 4014
Enertrade	Level 10 Comalco Place 12 Creek Street GPO Box 10 BRISBANE QLD 4001
<b>Petroleum Tenure Holders</b>	
CH4 Pty Ltd (EPP 364)	Level 13 10 Eagle St BRISBANE QLD 4001
BNG (Surat) Pty Ltd (EPP 688)	C/- Sunshine Gas Ltd Level 19 Waterfront Place 1 Eagle St BRISBANE QLD 4001
Eureka Petroleum Pty Ltd (EPP 814)	Level 2 33 York St SYDNEY NSW 2000

### 3.2 Interested Persons

<b>Local, State and Federal Government Departments</b>	
Environmental Protection Agency (Emerald) Environmental Operations - Central West (99 Hospital Road, Emerald, Queensland 4720)	PO Box 906 EMERALD QLD 4720
Environmental Protection Agency (Brisbane)	PO Box 155 BRISBANE ALBERT STREET QLD 4002
Commonwealth Department of Environment and Water Resources (Canberra) Environmental Assessment Branch – Mining and Nuclear Section	John Gorton Building PARKES ACT 2600
Department of Natural Resources and Water	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Coordinator General / Department of Infrastructure	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Premiers and Cabinet	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Housing	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Local Government, Planning and Recreation	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Mines and Energy	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Queensland Police	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Queensland Rail	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Queensland Transport	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Primary Industries and Fisheries	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Education Queensland	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Communities	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Main Roads	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Queensland Government Treasury	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Queensland Health	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Department of Emergency Services	<i>To be advised by the EPA – Potential Advisory Agency.</i>
Nebo Shire Council	Reynolds Street NEBO QLD 4742
Belyando Shire Council	PO Box 229 CLERMONT QLD 4721
<b>State Authorities</b>	
Ports Corporation	GPO Box 409 BRISBANE QLD 4001
<b>Conservation, Resource Management and Social Groups</b>	
Agforce	PO Box 13186 George Street BRISBANE QLD 4000
Fitzroy Basin Association	PO Box 139 ROCKHAMPTON QLD 4700

<b>Conservation, Resource Management and Social Groups (cont.)</b>	
Mackay Conservation Group	PO Box 826 MACKAY QLD D4740
Queensland Mines Rescue Service	QMRS State Manager PO Box 158 Dysart DYSART QLD 4745
Nebo-Broadsound Landcare Group	(tba)
Capricorn Conservation Group	PO Box 4011 ROCKHAMPTON QLD 4700
Family Services Australia	PO BOX 326, DEAKIN WEST ACT 2600
<b>Adjacent Mining Tenement Holders</b>	
BHP Billiton Mitsubishi Alliance – Saraji Coal Mine	Riparian Plaza 71 Eagle Street GPO Box 1389 BRISBANE QLD 4001
Bowen Basin Coal Pty Ltd – Lake Vermont Coal Mine (also EPC 549 and MDL 303)	GPO Box 374 BRISBANE QLD 4001
Anglo Coal (German Creek) Pty Ltd – EPC 747	Level 11 201 Charlotte Street BRISBANE QLD 4000
Aquila Resources Pty Ltd – EPC 755	Level 10 214 Adelaide Street BRISBANE QLD 4000

### 3.3 Consultation

NSC and SKM will develop a formal consultation strategy to ensure all potential stakeholders for the Project are adequately consulted. Consultation will be conducted as required during the key phases of the EIS process and in addition to the EIS process to address significant issues as they arise.

Additional stakeholders may be identified and consulted during the course of the EIS process for the Project. Consultation may involve newsletters, static displays, site visits, public meetings, and one-on-one discussion with potential stakeholders. Specific advisory body meetings will be conducted by the EPA during the course of the EIS process for the Project (i.e. during the public comment periods following the submission of the draft Terms of Reference and the draft EIS).

NSC has commenced consultation for the Project with the three affected landowners, Broadsound Shire Council, EPA (Emerald and Brisbane), the Department of Mines and Energy (Emerald and Brisbane), the Coordinator General/Department of Infrastructure, Enertrade, BBC, BMA, EPP Holders (Arrow, Sunshine, and Blue Energy), Sunwater and Powerlink.

## 4. Existing Environment, Potential Impacts and Environmental Management Strategies

### 4.1 Surface Water

All watercourses in the vicinity of the Project are ephemeral. The majority of the Project area is drained by Phillips Creek, which flows in a north easterly direction across EPC 837 before draining into the Isaac River. The Phillips Creek catchment possesses a long history of agricultural use in the form of cattle grazing and improved pasture development, and as a result, is a highly disturbed creek system.

Potential impacts to surface water from the Project include alteration of the natural flow regime caused by changes to surface relief from progressive longwall subsidence, deterioration in water quality from dirty runoff from disturbed areas (e.g. infrastructure areas, co-disposal dams, etc.) and acceleration of erosional processes from poorly designed or missing water management structures.

NSC will implement the following mitigation strategies to reduce potential impacts to surface water flows and quality.

- A “clean water – dirty water” management system will be implemented to divert clean runoff around disturbed areas and direct dirty run-off from disturbed areas to retention structures for treatment.
- A detailed water management plan will be developed for the Project to ensure water released off site meets the licensed discharge limits and the water quality objectives for Phillips Creek.
- The Project’s potential subsidence zone will be modelled to help predict impacts to drainage patterns and to assist in the development of appropriate mitigation strategies (e.g. diversions, drainage earthworks, etc.).
- A monitoring regime for subsidence and surface water quality will be developed for the Project to predict potential impacts and assist impact mitigation strategies.

The Project is also within the catchment that drains into the Shoalwater and Corio Bays Area which is identified as a RAMSAR wetland and is protected under the Commonwealth EPBC Act. Importantly, this sensitive area is located 200 km away and will not be significantly affected by the Project.

### 4.2 Groundwater

Groundwater presents a potential hazard for underground mining, and therefore, will be thoroughly investigated within the Project area. NSC will evaluate the extent of groundwater within the Project area and discuss mitigation and management measures. Groundwater modelling will be used to simulate the current groundwater environment and to assist in predicting regional impacts on groundwater users from mine related groundwater extraction.

Groundwater associated within the region is usually saline and has limited value as a resource. The Bowen Basin generally has few reliable aquifers. A preliminary groundwater investigation has identified a water source that may be used as a water supply for the Project. NSC will conduct additional groundwater studies to better define this water source.

### 4.3 Land Resources

The landscape is generally near flat to gently undulating plains and comprises a number of soil types. Vegetation has been extensively cleared to allow the sowing of improved pastures for grazing. Land capability, soil types and remnant vegetation will be evaluated within the Project area.

The expected impacts on land resources from the Project include changes to:

- landform;
- drainage patterns;
- land suitability; and
- land uses.

Subsidence from longwall mining can result in changes to the appearance of the landscape in the impact zone of the longwall mining operations. Subsidence occurs over the mined section of each longwall panel (goaf) and over time can create an undulating surface expression (corrugated appearance). Factors that may influence the occurrence of subsidence from longwall mining include the width and thickness of the mined coal seam, the number and timing of the coal seams mined, and the thickness and physical nature of the overlying strata.

As discussed, NSC will conduct subsidence modelling as an important part of the EIS. The results of subsidence modelling will be used to predict a range of potential impacts and assist in the development of mitigation strategies. Rehabilitation options for subsided areas will be evaluated as part of the assessment process.

A suitable post mine land use and decommissioning rehabilitation strategy will be developed for the Project. Where applicable, progressive rehabilitation will be promoted during the operational phase of the Project. Non-operational areas of the Project will be considered for re-vegetation projects (e.g. carbon offsets, riparian zone restoration, etc.).

Weed and pest management will be discussed as part of the Project's EIS. The development of a weed and pest management plan for the operational phase of the Project will be recommended.

#### 4.4 Regional Ecosystems

Although a substantial proportion of the Project area has been cleared for grazing purposes, remnant communities of native vegetation occur within EPC 837 (Figure 5). Remnant native communities are generally located along drainage lines or other areas less suitable for grazing or pasture improvement activities. Table 1 lists the endangered regional ecosystems that occur within the Project area and their current conservation status.

Regional ecosystem 11.3.1 is Brigalow forest type which is an open forest that is dominated by *Acacia harpophylla* and/or *Casuarina cristata*. This ecosystem type sometimes contains scattered emergent *Eucalyptus spp.* such as *E. coolabah*, *E. largiflorens*, *E. populnea*, *E. orgadophila*, and *E. pilligaensis*.

Regional ecosystem 11.3.1's understorey usually consists of *Geijera parviflora* and *Eremophila mitchellii* and has a sparse ground cover. This ecosystem type usually occurs on Cainozoic alluvial plains which may be occasionally flooded. Soils usually consist of deep cracking clays or texture contrast soils with sandy surfaces.

**Table 1: Regional ecosystems and their conservation status**

RE Code	Description	VMR status <sup>1</sup>	EPBC Act Status <sup>2</sup>
11.3.1	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on alluvial plains.	Endangered	Endangered
11.3.21	<i>Dichanthium sericeum</i> and/or <i>Astrebla spp.</i> grassland on alluvial plains. Cracking clay soils.	Endangered	Endangered

<sup>1</sup> Status under the *Vegetation Management Regulation 2002*.

<sup>2</sup> Status under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Regional ecosystem 11.3.21 is grassland with the dominant species being *Dichanthium sericeum* and/or *Astrebla spp.* This ecosystem type usually contains a wide range of other grass and forb species and dominant species may depend on seasonal conditions and management regimes.

Scattered trees may exist throughout the grassland and may include species such as *Eucalyptus coolabah*, *E. populnea*, *E. tereticornis* or *Acacia spp.* These regional ecosystems mainly occur on flat Cainozoic alluvial plains and are usually associated with rivers and creeks. The soil type is usually cracking clay and are often self mulching.

#### 4.5 Flora

Floristic surveys will be conducted within the Project area in late 2007, forming part of a series of baseline environmental studies to be conducted and presented in the Project's EIS.

In the interim, SKM has completed a series of desktop studies of the EPA's and DEWR's databases. Table 2 lists the flora species that may occur within the Project site and their current EPBC status.

Regional ecosystem 11.3.21 is habitat for the plant species *Thesium australe*, *Picris evae*, *Stemmacantha australis*, *Dichanthium queenslandica*, *Bothriochloa biloba* and *Digitaria porrecta*.

**Table 2: Potential rare and threatened plants species that occur near the Project area and their current EPBC status**

Threatened Species	Common Name	EPBC Status	Presence in relation to the Project Site
<i>Thesium australe</i>	Austral Toadflax	Vulnerable	Species or habitat likely to occur in the area
<i>Picris evae</i>	Hawkweed	Vulnerable	Species or habitat likely to occur in the area
<i>Stemmacantha australis</i>	Austral Cornflower	Vulnerable	Species or habitat likely to occur in the area
<i>Bothriochloa biloba</i>	Lobed Blue Grass	Vulnerable	Species or habitat likely to occur in the area
<i>Digitaria porrecta</i>	Finger Panic Grass	Endangered	Species or habitat likely to occur in the area





#### 4.6 Fauna

In late 2007 fauna surveys will be undertaken within the Project area as part of a series of baseline environmental studies to be presented in the EIS.

In the interim, SKM has completed a desktop study and produced a list of threatened faunal species that may occur within the Project area (Table 3). The list includes the current EPBC status of these species.

Regional ecosystem 11.3.1 is habitat for the painted honeyeater *Grantiella picta*. The painted honey eater is listed as 'rare' under the Queensland's *Nature Conservation Act 1992*.

Regional ecosystem 11.3.21 is habitat to a few fauna species including the grassland earless dragon *Tympanocryptis pinguicolla* and the five-clawed worm skink *Anomalopus mackayi* which are both protected under the EPBC Act.

Regional ecosystem 11.3.21 is also habitat for the grey snake *Hemiaspis damelii* which is classified as 'rare' under Queensland's *Nature Conservation Act 1992*.

**Table 3: Threatened fauna species and their current EPBC status**

Threatened Species	Common Name	EPBC Status	Presence in relation to the Project
<b>Birds</b>			
<i>Erythrotriorchis radiatus</i>	Red Goshawk	Vulnerable	Species or species habitat likely to occur within area
<i>Geophaps scripta scripta</i>	Squatter Pigeon	Vulnerable	Species or species habitat likely to occur within area
<i>Neochmia ruficauda ruficauda</i>	Star Finch	Endangered	Species or species habitat likely to occur within area
<i>Rostratula australis</i>	Australian Painted Snipe	Vulnerable	Species or species habitat likely to occur within area
<b>Mammals</b>			
<i>Dasyurus hallucatus</i>	Northern Quoll	Endangered	Species or habitat likely to occur in the area
<i>Nyctophilus timoriensis</i>	Eastern Long-eared Bat	Vulnerable	Species or habitat likely to occur in the area
<b>Reptiles</b>			
<i>Egernia rugosa</i>	Yakka Skink	Vulnerable	Species or habitat likely to occur in the area
<i>Furina dunmalli</i>	Dunmall's Snake	Vulnerable	Species or habitat likely to occur in the area
<i>Rheodytes leukops</i>	Fitzroy Tortoise	Vulnerable	Species or habitat likely to occur in the area

#### 4.7 Noise, Vibration, and Air Quality

Low levels of noise and vibration are typical of rural areas that surround the Project site. Noise impacts from surrounding open cut coal mining operations would be localised to machinery operation (stationary and mobile) and blasting. The level of noise would vary depending on the level of machinery operation, traffic in the area and climatic conditions (e.g. wind direction, etc.). The principal sources of noise from the Project will be surface infrastructure (e.g. CHPP) and mobile loading equipment. A baseline noise survey will be undertaken and in conjunction with additional studies will be used to develop NSC's noise mitigation strategies. This process will include the identification of noise sensitive receptors in the vicinity of the Project area.

The Project will be required to meet air quality standards for dust deposition and PM<sub>10</sub> levels under the *Environmental Protection Act 1994*. Air quality in the region is mainly influenced by pastoral activity, climatic conditions and surrounding open cut mining operations. The Project's principal dust sources will be mobile equipment movements, topsoil stripping, surface infrastructure construction, exposed co-disposal areas, coal stockpiles and coal handling activities.

Assessment of the air quality and suitable mitigation methods will be outlined in the Project's EIS. Fugitive dust generated by the Project may be managed by the use of water carts for road watering, sprays on crushers and conveyor transfer points, conducting progressive rehabilitation (if required), limiting disturbance to what is required for safe operations, and if appropriate, changing work practices during adverse meteorological conditions.

The Project's underground mining operations and the minimal amount of sensitive receptors in the vicinity should reduce the significance of noise, vibration and air quality issues. Cumulative noise and air quality impacts will be considered as part of the Project's impact assessment process.

#### 4.8 Greenhouse Gases

NSC acknowledges the risks of climate change associated with increasing greenhouse gas concentrations in the atmosphere and believes an industry wide approach to the issue is the best policy for the Australian coal industry and economy (e.g. clean coal technology, etc.).

NHCL (NSC's parent company) is a financial member of the Coal21 program which is researching advanced technologies to reduce or eliminate the greenhouse gas emissions associated with the use of coal.

NHCL is a member of the Commonwealth's Greenhouse Challenge Plus and Energy Efficiency Opportunities programs and is required to report on greenhouse gas production and energy use, respectively, and to offer abatement strategies to reduce greenhouse gas production and energy use. NSC, as subsidiary company of NHCL, will be incorporated into these programs.

NHCL is exploring carbon offset and abatement options to minimise or eliminate the Company's carbon footprint. NSC's future operations will be included in this process. The Project will be captured as part of NHCL's future carbon reporting requirements under the Commonwealth's proposed emissions trading scheme for greenhouse gas production.

NSC will continue to explore possible offset and abatement options for greenhouse gas emissions at the Project level. The possible capture of coal seam methane for supplementary power generation is a positive initiative being considered, and is particularly significant, given that methane is over twenty times worse than carbon dioxide in terms of its greenhouse gas potential. Re-vegetation schemes within the Project area may be promoted for carbon offset purposes.

#### **4.9 Infrastructure Impacts**

As previously discussed, the proposed Central Queensland Gas Pipeline passes directly over the Project's coal deposit. Other infrastructure present includes electricity, telecommunications and water pipelines. New infrastructure, such as power supply lines and water pipelines will be required.

Some infrastructure relocations may be required, such as telecommunications and electricity, to accommodate mining of the Project's coal reserves. NSC will liaise with the appropriate authorities in relation to these relocation matters.

#### **4.10 Visual Amenity**

The physical features associated with the Project that may have aesthetic impacts include co-disposal dams, surface infrastructure (e.g. CHPP, etc.), and the mine's portals. The remote location of the Project and the type of mining proposed are expected to reduce the significance of this issue.

#### **4.11 Cultural Heritage Values**

The traditional landowners of the region are the Barada Barna Kabalbara & Yertimarla (BBKY) people.

Investigation of Aboriginal cultural heritage values within the Project area is proposed to be undertaken in consultation with the BBKY. Work is also proposed to evaluate the remnants of European settlement. A CHMP will be developed for the Project in consultation with the BBKY.

#### **4.12 Socio-Economic Conditions**

The region surrounding the Project supports broad-acre agricultural activities and mining activities.

The town of Dysart is the closest town to the Project. The town was initially built to service the nearby mining operations and has a current population of 4000. Dysart's economy relies on the surrounding coal mines and local pastoral and grain industries.

It is likely that most of the Project's workforce will live in Dysart. As previously discussed, NSC is exploring various alternatives for the Project's workforce and accommodation arrangements.

The EIS will assess the social impacts of the Project on the local community. The local community has had previous exposure to the coal mining industry through existing long term coal mines such as BMA's Saraji and Norwich Park operations.

Urban centres in the coal mining belt of the Bowen Basin have one of the highest recorded median household wages in Australia. The recent mining boom has put pressure on infrastructure and accommodation in the towns of Moranbah and Dysart and will be carefully considered as part of the social impact assessment process.

As previously discussed, NSC will implement a community consultation regime that will involve the local community, Broadsound Shire Council, applicable State and Commonwealth departments and relevant non-government organisations (e.g. Landcare groups, etc.).

#### **4.13 Environmental Management**

The EIS process will describe:

- the Project's existing environmental values;
- the potential adverse and positive impacts to the existing environmental values from the Project's construction, operation and decommissioning; and
- NSC's proposed measures and strategies to prevent or mitigate adverse environmental impacts to the Project's environmental values.

If the EIS is accepted, it will provide an Environmental Management Plan for the Project (i.e. based on the findings of the EIS). The EPA will use the Project's Environmental Management Plan and EIS Report to draft an Environmental Authority for the operational and decommissioning phases of the Project. The Environmental Authority is one of the main environmental approvals for the Project

If the Project is deemed a Controlled Action by DEWR, the EPA will manage the EIS process for DEWR under a bilateral agreement. DEWR will input into the EIS process at each of the critical steps and will issue a separate environmental approval for the Project under the EPBC Act.

On grant of the mining lease for the Project and before operations commence, NSC will produce a Plan of Operations and submit it to the EPA to demonstrate operational compliance with its Environmental Authority. The Plan of Operations may include specialist management plans for significant Project issues, such as subsidence, surface water management, etc..

## 5. Contact Details

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## 6. References

AMC Consultants Pty Ltd 2007, New Saraji Conceptual Mine Plan, New Hope Coal Australia, Ipswich.

O'Reilly K. 2006, *EPC 837 (Phillips Creek) Report for the 12 Months Ending 19 October 2005*, Prepared on behalf of New Hope Exploration Pty Ltd for the Queensland Department of Mines and Energy, New Hope Coal Australia, Ipswich.