I Off Lease Assessment Report

Assessment Report

Kevin's Corner Project Off Lease Assessment

4 OCTOBER 2012

Prepared for

Hancock Galilee Pty ltd

307 Queen Street
Brisbane QLD 4001

42626920

URS

Project Manager:

Rob Storrs
Principal Environmental Scientist

URS Australia Pty Ltd

Level 17, 240 Queen Street
Brisbane, QLD 4000
GPO Box 302, QLD 4001
Australia

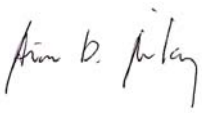
T: 61 7 3243 2111
F: 61 7 3243 2199

Principal-In-Charge:

Chris Pigott
Senior Principal

Author:

Elisha Keighley
Senior Environmental Engineer



Aries Milay
Senior Environmental Scientist

Reviewer:

Rob Storrs
Principal Environmental Scientist

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Table of Contents

Table of Contents

Tables

Figures

Abbreviations

Abbreviation	Description
ALC	Agricultural Land Class
CID	Community Infrastructure Designation
CHMP	Cultural Heritage Management Plan
CHPP	Coal handling and preparation plant
CRD	Connors River Dam
DERM	Department of Environment and Resource Management, Queensland Government
DTMR	Department of Transport and Main Roads, Queensland Government
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
EPC	Exploration Permit Coal
EVNT	Endangered, vulnerable or near threatened
GL	Gigalitre
GQAL	Good Quality Agricultural Land
GSSE	GSS Environmental
ha	hectare
HGPL	Hancock Galilee Pty Ltd
HP	High priority
HVR	High Value regrowth
ILUA	Indigenous Land Use Agreement
km	kilometre
LMU	Land Management Unit
m	metre
MDL	Mineral Development Licence
ML	millilitre
MLA	Mining lease application
MNES	Matters of National Environmental Significance
Mtpa	Million tonne per annum
MW	Megawatt
RE	Remnant Ecosystem
SDPWO	*State Development and Public Works Organisation*
SEIS	Supplement Environmental Impact Statement
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities, Australian Government
SGCP	South Galilee Coal Project
SPA	*Sustainable Planning Act 2009*
SPR	*Sustainable Planning Regulation*
TEC	Threatened Ecological Community
TSF	Tailings storage facility
URS	URS Australia Pty Ltd
VM Act	Vegetation Management Act 1999

1

Introduction

1.1 Outline

Hancock Galilee Pty Ltd (HGPL, the Proponent) has requested that URS Australia Pty Ltd (URS) assess the potential impacts on land use, soil and ecology aspects of the off lease infrastructure proposed to be developed for the Kevin's Corner Project (the Project).

The proposal is a greenfield coal mine comprising both open-cut and underground workings to produce up to 30 million tonnes of thermal coal annually from the coal seams in the Galilee Basin for in excess of 30 years. A description of the Project can be found in the Kevin's Corner Environmental Impact Statement (EIS) (HGPL 2011).

The Kevin's Corner EIS (HGPL 2011) provided for detailed assessment and mitigation of the potential impacts on the environmental values within mining lease application (MLA) 70425. HGPL propose to develop off lease rail and road infrastructure (outside of MLA 70425) to support the Project. The description of the off lease rail and road alignment presented in the EIS has been slightly refined. As such, the refined alignment, as well as the assessment of potential impacts on land use, soil and ecological values, is presented in this report.

1.2 Purpose of this Report

The purpose of this report is to present the results of a desktop review of current literature and available studies to describe the existing environmental values relevant to land use, ecology and soils-related aspects and potential impacts that may occur as a result of the development of the refined Project off lease infrastructure. The results of a detailed ecological survey commissioned by HGPL in August 2012 across the off lease access road and rail spur are summarised in this report and detailed fully in SEIS Volume 2 Appendix Q. Where impacts are identified, appropriate mitigation measures are identified to prevent or minimise impacts.

The assessment and mitigation of other potential environmental aspects relevant to development of the off lease infrastructure are adequately addressed in the Kevin's Corner EIS (HGPL 2011). Further discussion of applicable air quality and noise and vibration impacts and mitigation strategies specific to the proposed off lease infrastructure development and in response to submitter comments are presented in the applicable sections of the Supplementary EIS (SEIS).

This report is intended to provide adequate information to inform a decision on the appropriateness of the proposed development of off lease rail infrastructure and target the need for further studies, should they be required. Additionally this report provides information on the approvals pathway for those off lease infrastructure requirements and commentary on the water assurance for the Project and the options under consideration for the surety of water supply.

2

Off Lease Road and Rail

2.1 Description

2.1.1 Off Lease Rail

Processed coal will be transported from the Kevin's Corner mine site along the proposed Alpha to Abbot Point Rail Line to the proposed Port of Abbot Point. The Kevin's Corner rail spur, which connects the Kevin's Corner mine site to the proposed Alpha to Abbot Point Rail Line, is approximately 17.8 km in length (including both on lease and off lease components).

The proposed off lease rail spur (outside of MLA 70425) consists of both north and south rail sections of approximately 2 kilometres (km) in length. The off lease rail spur is to be sited on rural lands to the east of MLA 70425 and is depicted on Figure 2-1.

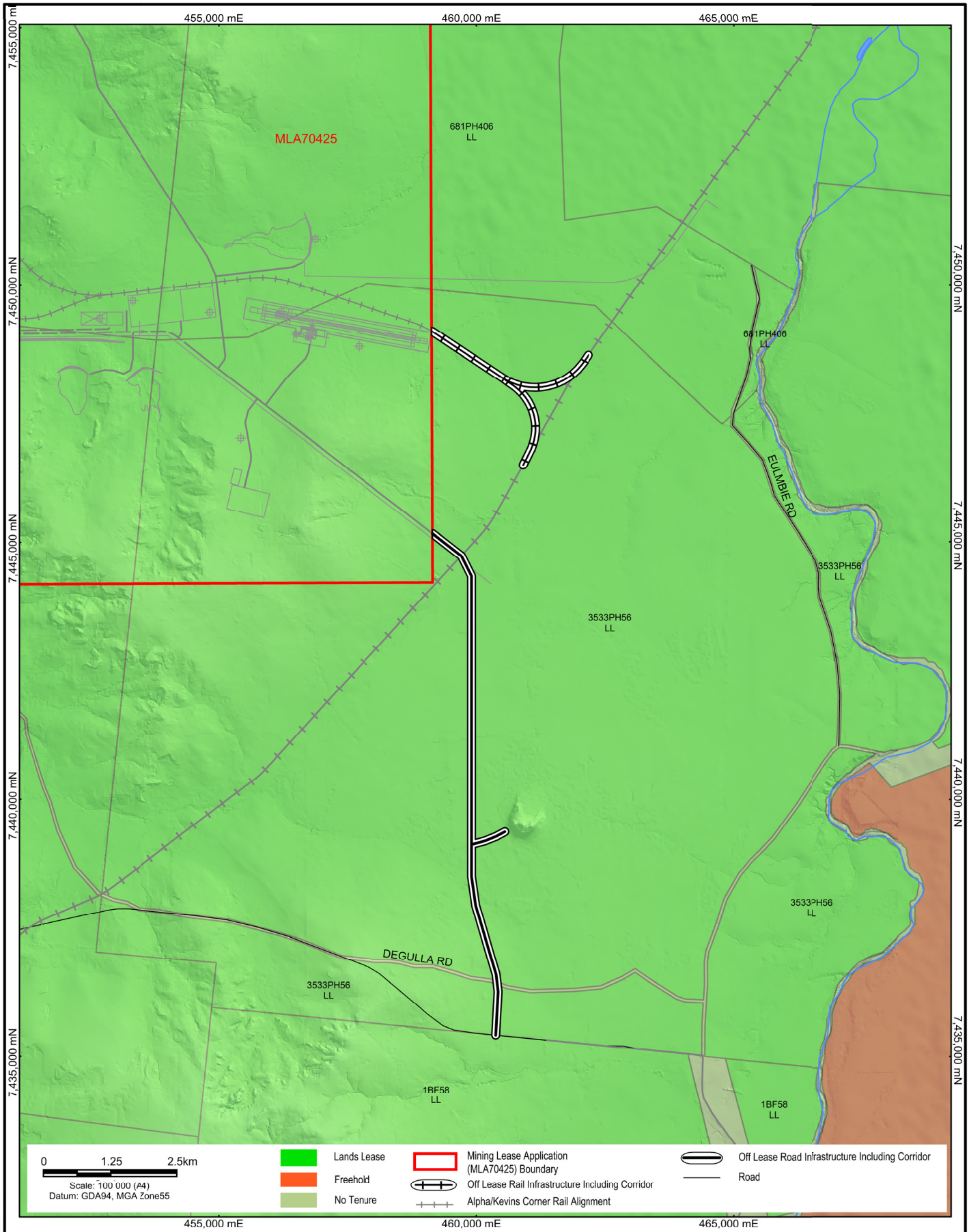
The description of the off lease rail alignment presented in the EIS has since been slightly refined. The proposed rail spur alignment is located to align with the Alpha to Abbot Point Rail line while avoiding excessive cuts and/or filled embankments and to minimise the impact on surrounding land forms, environmental values and land holder interests. The alignment also considered the placement of other Project infrastructure, drainage and access to local properties. The rail infrastructure is considered to be a permanent structure for the life of the Project.

For the purposes of defining a "study area", the corridor for locating the proposed off lease rail infrastructure is assumed to be a corridor of 75 metres (m) either side of the rail centre line. An approximate 80 hectare (ha) corridor (150 m in width) has been allowed for the assessment of the proposed off lease rail infrastructure. Terrestrial flora and fauna values have been investigated and described across a 100 m wide corridor with 60 metres width used as the basis of the impact assessment.

2.1.2 Off Lease Road

The proposed realignment of Jericho-Degulla Road shown on Figure 2-1 involves a diversion of approximately 8 km of the unsealed Jericho-Degulla-Road. The proposed road will allow access to the Kevin's Corner coal mine.

For the purposes of defining a "study area", the corridor for locating the proposed off lease road infrastructure is assumed to be a corridor of 75 metres (m) either side of the road centre line. An approximate 152 hectare (ha) corridor (150 m in width) has been allowed for the assessment of the proposed off lease road infrastructure. Terrestrial flora and fauna values have been investigated and described across a 100 m wide corridor with 60 metres width used as the basis of the impact assessment.



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Kevin's Corner Project
Supplementary Environmental Impact Statement

LAND USE CONTEXT

URS

OFF LEASE ASSESSMENT REPORT

Figure: 2-1

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2.2 Land Use Impact Assessment

In accordance with the approach adopted in the preparation of the EIS (HGPL 2011), URS carried out an assessment of the potential land use impacts of the additional off lease road and rail infrastructure involving:

- Identification of publicly available information including aerial photography, state and local government planning instruments and state government database searches;
- Desktop analysis of this information relevant to the Project and nature of the Project; and
- Meeting with relevant members of the Project team.

Applying this desktop approach, it was confirmed that the off lease area has been predominantly used for pastoral activities such as cattle grazing, fattening and breeding. Grazing activity occurs on partially cleared land of native and buffel grass pastures surrounding the proposed off lease infrastructure. Various forms of agricultural infrastructure is present throughout the study area and includes fence lines, bores and windmills, formed and unformed roads and holding yards.

2.2.1 Potential Impacts and Mitigation Measures

Sufficient information was available to carry out a comprehensive assessment of the potential impacts of the proposed off lease infrastructure on the following land use aspects.

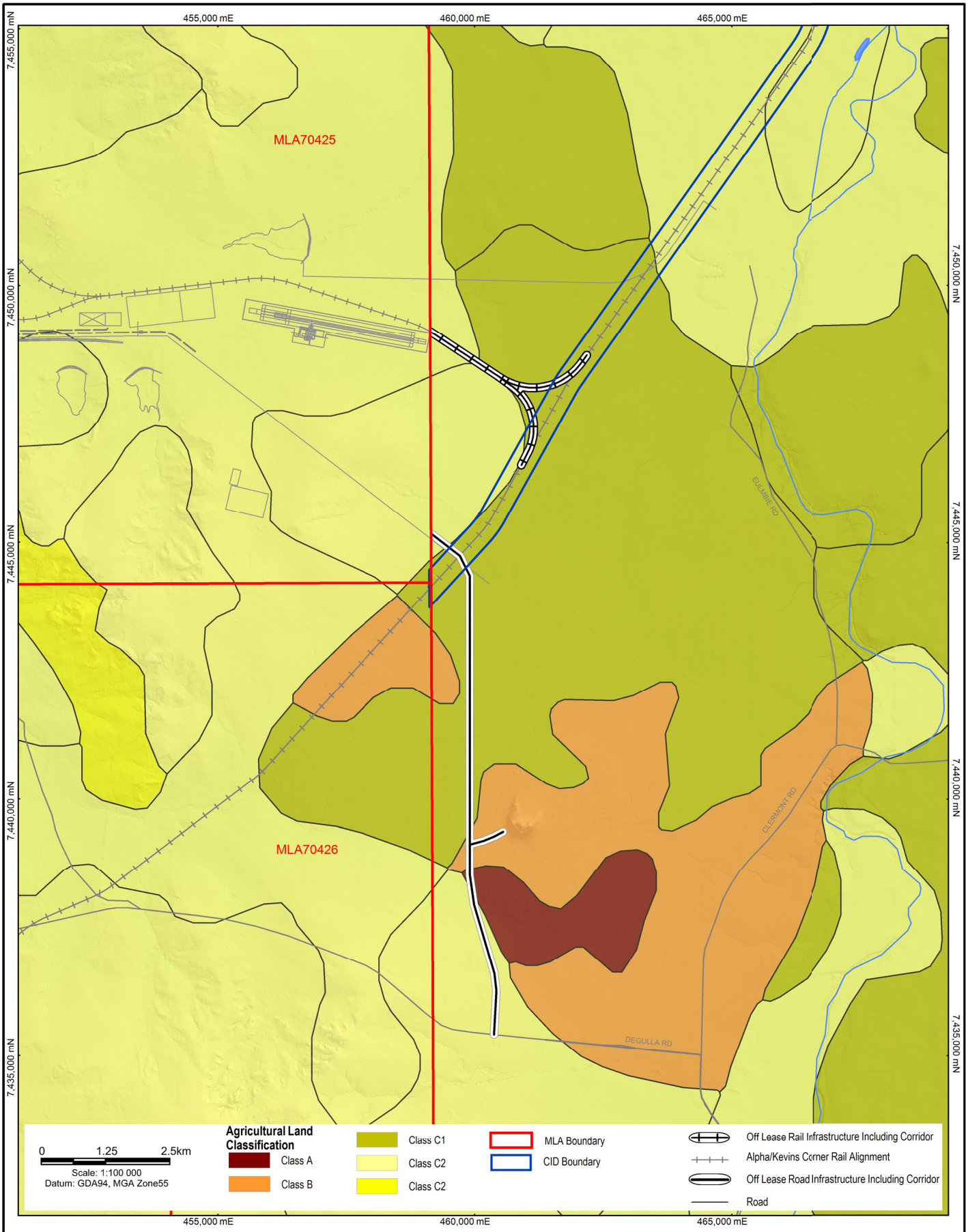
- Tenure and tenement characteristics;
- Native title;
- Protected areas;
- Infrastructure;
- Land uses and facilities, including sensitive receptors;
- Agricultural values; and
- Land suitability.

The land use impact assessment, including corresponding mitigation methods, are summarised in Table 2-1. The relevant land use and planning constraints such as areas of native title, Community Infrastructure Designation (CID) or agricultural land class (ALC) relevant to the off lease rail and road infrastructure are shown on Figure 2-2.

This supplementary assessment of potential land use impacts resulting from development of the off lease infrastructure indicates that management strategies set out in the EIS (or discussed in the SEIS) will adequately mitigate land use impacts with the following exception.

- The potential for fragmentation and segregation will require one or more stock crossings to allow for the movement of stock in and out of each of these created land parcels and consultation between the land holder and rail manager will be required to allow for stock movement across the rail infrastructure.

An assessment of statutory planning and approval options is discussed in Section 2.2.2.



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Kevin's Corner Project
Supplementary Environmental Impact Statement

LAND USE CONSTRAINTS

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OFF LEASE ASSESSMENT REPORT

Figure: **2-2**

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2 Off Lease Road and Rail

Table 2-1 Land use impact assessment summary

Land Use Aspect	Potential Impact	Proposed Mitigation Method
Tenure and tenement characteristics	Approximately 232 ha of area is to be excluded from within Surbiton South property holding by reconfiguring into new allotments separate from the existing land tenure – refer to Figure 2-1. MLA 70425 covers the Project mine site, which extends over Exploration Permit Coal (EPC) 1210 and Mineral Development Licence (MDL) 333. The proposed rail and road alignment overlies EPC 1263 and will not impact any other type of mining or petroleum tenement.	HGPL will continue to liaise with the landholder to determine adequate compensation for loss of land area.
Protected areas	The proposed rail and road alignment is to be located on unimproved and improved grazing pasture and areas comprising "Of Concern Sub-Dominant and Dominant Remnant Ecosystem". In addition, the proposed road alignment intersects a portion of Endangered Regional Ecosystem (Category B protected area) at the southern-most point of the alignment. Category A protected areas will not be impacted by development of either the off lease rail or road.	Mitigation measures proposed to ameliorate the impacts to ecological values within impacted portion of Endangered Remnant Ecosystem are contained within Section 9 of the Kevin's Corner EIS (HGPL 2011)).
Native title	The proposed development of the off lease road and rail will result in loss of lands with cultural value to traditional owners. The proposed alignment of the off lease rail and road infrastructure lies wholly within the boundaries of the Wangan & Jagalingou Native Title claim (QC04/5, QUD85/04), as shown in Figure 6-8 of the Kevin's Corner EIS (HGPL 2011), with the exception of the southern-most section of the road.	An Indigenous Land Use Agreement (ILUA) has been approved for the Wangan & Jagalingou Alpha Coal Railway ILUA Area shown in Figure 2-2 and is currently in place for the proposed land use activities. A Cultural Heritage Management Plan (CHMP) has been agreed between the Proponent and the Wangan & Jagalingou. The terms of this CHMP will cover the off lease developments.
Infrastructure	The area of the proposed off lease infrastructure development is predominantly low intensity grazing with few services, therefore the development of the proposed infrastructure is not likely to detrimentally impact existing services or utilities. The access road may intersect private electricity lines servicing surrounding homesteads and existing on farm infrastructure, access tracks and fences. The construction of the rail spur and access road will impact the existing transport infrastructure networks as per the impact assessment undertaken within Section 6.5 and Section 17 of the Kevin's Corner EIS (HGPL 2011).	To ameliorate any potential impacts to the landholder, the Proponent will reinstate any damage to on-farm infrastructure and utilise the mitigation measures proposed in Section 6.5 of the Kevin's Corner EIS (HGPL 2011).

2 Off Lease Road and Rail

Land Use Aspect	Potential Impact	Proposed Mitigation Method
Land uses and facilities, including sensitive receptors	The nearest sensitive receivers to the rail spur alignment are Eulimbie Homestead and Surbiton Homestead. The proposed off lease road realignment is located 500 m to west of Surbiton South Homestead and will include a connection from the realigned road to the property. This can also be utilised for access to the Surbiton South Quarry should it receive planning approval and become operational. Potential impacts on surrounding land uses may include reduced amenity as a result of: • Increased vehicular traffic and associated impacts on amenity (refer to EIS Volume 1, Section 17); • Dust and other windblown particulate contaminants (refer to EIS Volume 1, Section 13); • Noise and acoustic intrusion (refer to EIS Volume 1, Section 15 and further discussion in SEIS); • Reductions in visual amenity (refer to EIS Volume 1, Section 7); and • Light spillage from rail movements (refer to EIS Volume 1, Section 7).	Potential impacts on surrounding land uses will be adequately mitigated through the proposed mitigation measures contained within Section 6.5 of the EIS (HGPL 2011). Operational techniques contained within the EMP (refer to EIS Volume 2, Appendix W) will be included in an Environmental Management Plan (EMP) for off lease infrastructure to mitigate potential amenity impacts at sensitive receptors in the vicinity of the off lease road and rail spur.
Agricultural values	Potential reduction in the agricultural values of the land underlying and adjoining the off lease infrastructure may result by way of: • Landscape fragmentation and segregation; • Impediments to existing on farm operations; and • Preclusion of the existing use/and future uses (cattle grazing). There is potential for the proposed rail infrastructure to fragment the existing farm land and result in areas of the Surbiton South property being segregated from regular farm operations. This is likely to occur for the parcel of land created between the rail spurs and Alpha to Abbot Point Rail line alignment and may also happen, to a lesser extent, for the parcels of land created between: • The property boundary with Surbiton, the perimeter of MLA 70425 and the northern rail spur alignment; and • The Alpha to Abbot Point Rail line, southern rail spur alignment, proposed realignment of Jericho-Degulla Road and the perimeter of MLA 70425.	The potential for fragmentation and segregation will require one or more stock crossings to allow for the movement of stock in and out of each of these created land parcels. To ensure the proposed infrastructure does not detrimentally impact Surbiton South farm operations, consultation between the land holder and rail manager will be required to allow for stock movement across the rail infrastructure. In addition: • Land use management techniques within the EMP will sufficiently ameliorate impacts to agricultural values of the subject lands; • Stock crossings over/under proposed infrastructure to facilitate stock movement; and • Ongoing land holder consultation to discuss farm management techniques before, during and after construction of the infrastructure and for during operation of the proposed infrastructure.

2 Off Lease Road and Rail

Land Use Aspect	Potential Impact	Proposed Mitigation Method
Land suitability	The proposed off lease infrastructure and extent of Good Quality Agricultural Land (GQAL) impacted is described in Figure 2-2. Details of the amount of GQAL loss are contained within Section 3 of this report. In summary, potential impacts on land suitability include: • Loss of Agricultural Land Class (ALC) A, B, C1 and C2 through the establishment of proposed infrastructure — The proposed rail spurs will impact areas of Class C1 GQAL, and — The proposed road will impact areas of Class A, B and C1 GQAL; • Fragmentation to existing agricultural landscape; and • Both the rail and the road are considered permanent infrastructure which will preclude any other land use from occurring where they are located; Strategic Cropping Land is not present in the study area.	To ameliorate the impacts to land suitability during construction the following measures will be employed: • Erosion controls will be constructed where necessary; • As soon as practicable, after completion of construction activities, the construction area will be progressively rehabilitated to match the surrounding landform; • Stockpiled topsoil will be distributed across the rehabilitated area and, in consultation with the landholder, any cleared vegetation placed across it to assist in soil retention and provision of feed stock for cattle (where appropriate); and • Revegetation will use appropriate species for the subject site (i.e. crops/pasture or Indigenous native species).

A draft Environmental Management Plan (EM Plan) has been developed for the construction and operation of the off lease infrastructure (Appendix T2 of the SEIS). Where applicable the EM Plan references/align with existing plans including the Kevin's Corner mine EM Plan (Appendix T1 of the SEIS) and the Alpha rail EM Plan.

2.2.2 Approval Options

The proposed Kevin's Corner Coal Mine was deemed a Significant Project under the provisions of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) in September 2009. The Alpha to Abbot Point Rail line was approved as an infrastructure facility of significance under the SDPWO Act; however this approval did not include the proposed off lease rail spur.

The proposed off lease rail infrastructure is located outside of the Kevin's Corner Mining Lease Area (MLA 70425) and therefore exemptions under Schedule 4, Table 5 of the *Sustainable Planning Regulation 2009* (SPR) and Section 319 of the *Mineral Resources Act 1989* do not apply in this instance. The proposed off lease rail spur will therefore require approval through alternative approval pathways.

Adams and Sparkes Pty Ltd were engaged to identify and investigate alternative approval pathways including:

- Community Infrastructure Designation under the *Sustainable Planning Act 2009* (SPA);
- A sublease from the Minister for Transport under the *Transport Infrastructure Act 1994*;
- A Mining Lease for Transportation through Land under the *Mineral Resources Act 1989*; or
- Development Approval under the Local Planning Scheme under the *Sustainable Planning Act 2009*.

Full detail on the analysis of each approval option is contained in the Approval Options report, dated May 2012, provided in Appendix A to this report.

2 Off Lease Road and Rail

Adams and Sparkes investigations (2012) identified that the most appropriate option for gaining approval to establish the proposed off lease rail infrastructure is to seek development approval under the SPA, more specifically, the following approvals:

- Development Permit for a Material Change of Use for Railway Activities; and
- Development Permit for Reconfiguration of a Lot.

Although there are risks associated with this option, namely delays brought about by Council and Referral Agency assessment timeframes, it is the preferred option to obtain approval for the Project.

Given the size and nature of the proposed development it is recommended that a development application be made to Barcaldine Regional Council for a Material Change of Use. With the timeframes outlined by HGPL to commence the construction process and the approximate timeframe to complete all approvals associated with the project, it is highly recommended that the approvals process detailed above is started as soon as possible and all additional technical studies commenced immediately.

The Proponent is progressing discussions with Barcaldine Regional Council and the Coordinator General's Office regarding a collaborative approach to the development application for a Material Change of Use for the off-lease infrastructure.

2.3 Soils Impact Assessment

Following the same methodology adopted in the preparation of the Kevin's Corner Soil and Land Suitability Assessment presented in the EIS (HGPL 2011), GSS Environmental (GSSE) applied the Desert Uplands - Land Systems Mapping (Lorimer 2005) to review the landscape characteristics and soil types within the off lease road and rail infrastructure corridors.

The desktop assessment approach provided sufficient information for the reasonable assessment of the potential impacts of the proposed off lease rail infrastructure on the soil types and land characteristics.

A summary of the information available to undertake the soils assessment including the land systems, Remnant Ecosystem (RE) and Land Management Unit (LMU) identified as corresponding to the area of the off lease rail and road corridors are provided in Table 2-2 and Table 2-3 respectively, with corresponding mapping illustrated in Figure 2-3. Further description of Land Management Units is included at Appendix B to this report.

Table 2-2 Land systems information for off lease rail corridor

Land Unit	Area (ha)	Land System Summary	LMU
JJ6	24	Alluvial Fans. Very deep, reddish-brown, uniform sandy loams overly a buried clay soil. Woodlands of silver-leaved ironbark, poplar box and ghost gum. RE 10.5.5 predominant, but significant areas of RE 10.3.12 also present.	8
JJ2	4	Crests and upper slopes. Shallow, red to yellowish brown texture contrast soils with sandy loam topsoils and an ironstone hardpan within 0.5 m of the surface. Mid-tall open woodlands of silver-leaved ironbark with occasional ghost gum and poplar box. RE 10.7.11 is predominant, but significant area of RE 10.5.5 also present.	1
SN5	6	Drainage depressions. Very deep, grey cracking-clay soils with silty clay topsoils. Mid-tall open woodlands of coolabah. RE 11.3.3 predominant.	1
SN4	46	Lower plains. Very deep, dark grey and black, uniform, cracking-clay soils, often with pronounced linear gilgai micro-relief. Sparse, low woodlands of brigalow with an understorey of forest bluegrass and Flinders grass. RE 11.8.11 predominant.	12
Total	80		22

Table 2-3 Land systems information for off lease road corridor

Land Unit	Area (ha)	Land System Summary	LMU
JJ6	36	Alluvial Fans. Very deep, reddish-brown, uniform sandy loams overlie a buried clay soil. Woodlands of silver-leaved ironbark, poplar box and ghost gum. RE 10.5.5 predominant, but significant areas of RE 10.3.12 also present.	8
JJ5	7	Drainage depressions. Texture-contrast profiles with sodic, mottled clay subsoils. A sandy wash layer maybe present. Tall woodlands of poplar box, but river red gum is common and brigalow usually occurs on the lower reaches where heavy clay soils appear. RE 10.3.14 and RE 10.3.27 are predominant.	6
JJ2	16	Crests and upper slopes. Shallow, red to yellowish brown texture contrast soils with sandy loam topsoils and an ironstone hardpan within 0.5m of the surface. Mid-tall open woodlands of silver-leaved ironbark with occasional ghost gum and poplar box. RE 10.7.11 is predominant, but significant area of RE 10.5.5 also present.	1
SN5	9	Drainage depressions. Very deep, grey cracking-clay soils with silty clay topsoils. Mid-tall open woodlands of coolabah. RE 11.3.3 predominant	1
SN4	5	Lower plains. Very deep, dark grey and black, uniform, cracking-clay soils, often with	12

2 Off Lease Road and Rail

Land Unit	Area (ha)	Land System Summary	LMU
		pronounced linear gilgai micro-relief. Sparse, low woodlands of brigalow with an understorey of forest bluegrass and Flinders grass. RE 11.8.11 predominant.	
SN3	16	Plains. Uniform, grey-cracking-clay soils with self-mulching topsoils. Tall, very sparse woodlands of gum-topped bloodwood with isolated shrubs of mimosa and a ground layer of desert bluegrass, red Flinders grass and silky browntop. RE 11.8.11 predominant.	12
SN2	63	Plains. Moderately steep, red-brown, gradational-textured soils overlying ferricrete at approximately 1m depth. Tall open woodlands of silver-leaved ironbark with ghost gum and dense pasture of bluegrass, kangaroo grass and wiregrass. RE 11.8.4 predominant.	9
Total	152		49

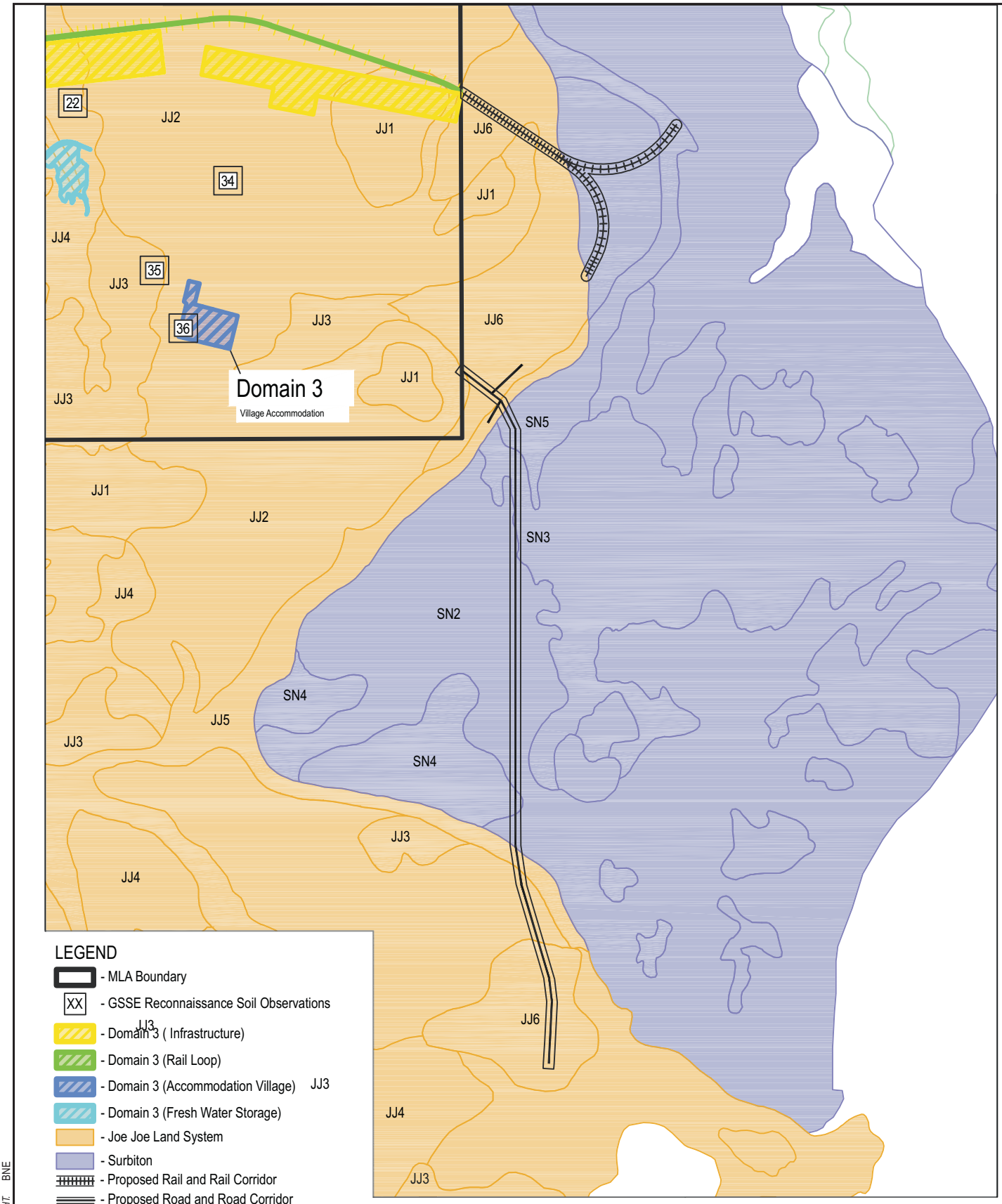
Preliminary results using the Classification of Agricultural Class Land (ALC) mapping as published by DERM (2010) show that the study area is largely covered by Class C1 and C2 land with some areas of Class A and B, as per Table 2-4 and Figure 2-4. This mapping is derived from broad scale remote sensing techniques; however indicates that approximately 156 ha of Good Quality Agricultural Land (GQAL) lies within the potential disturbance area of the off lease rail and road infrastructure corridors. This disturbance area is calculated on a conservative 150 m wide corridor which will be refined during detailed design resulting in an impact to GQAL less than the currently predicted 156 ha.

Table 2-4 Agricultural Land Class and GQAL Information for off lease rail corridor

Agricultural Land Class	Area (ha)	
	Off Lease Rail Corridor	Off Lease Road Corridor
A(GQAL)	-	12
B(GQAL)	-	12
C1(GQAL)	47	85
C2	33	43
C3	-	-
D	-	-

2 Off Lease Road and Rail

Given that the off lease infrastructure will be considered permanent structures; this land is therefore not suitable for other use. The post mining land suitability class for the area is estimated to be Class 5, and ALC of D, for both cropping and grazing assessments, similar to the Kevin's Corner EIS Report Section 5 (HGPL 2011).



Source: GSSE Drawing No Fg2.3_URS03-012_Landsystemsoffilease_120614.dwg

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Kevin's Corner Project
Supplementary Environmental Impact Statement

LAND SYSTEMS RELEVANT TO OFF LEASE ROAD AND RAIL

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OFF LEASE ASSESSMENT REPORT

Figure: 2-3

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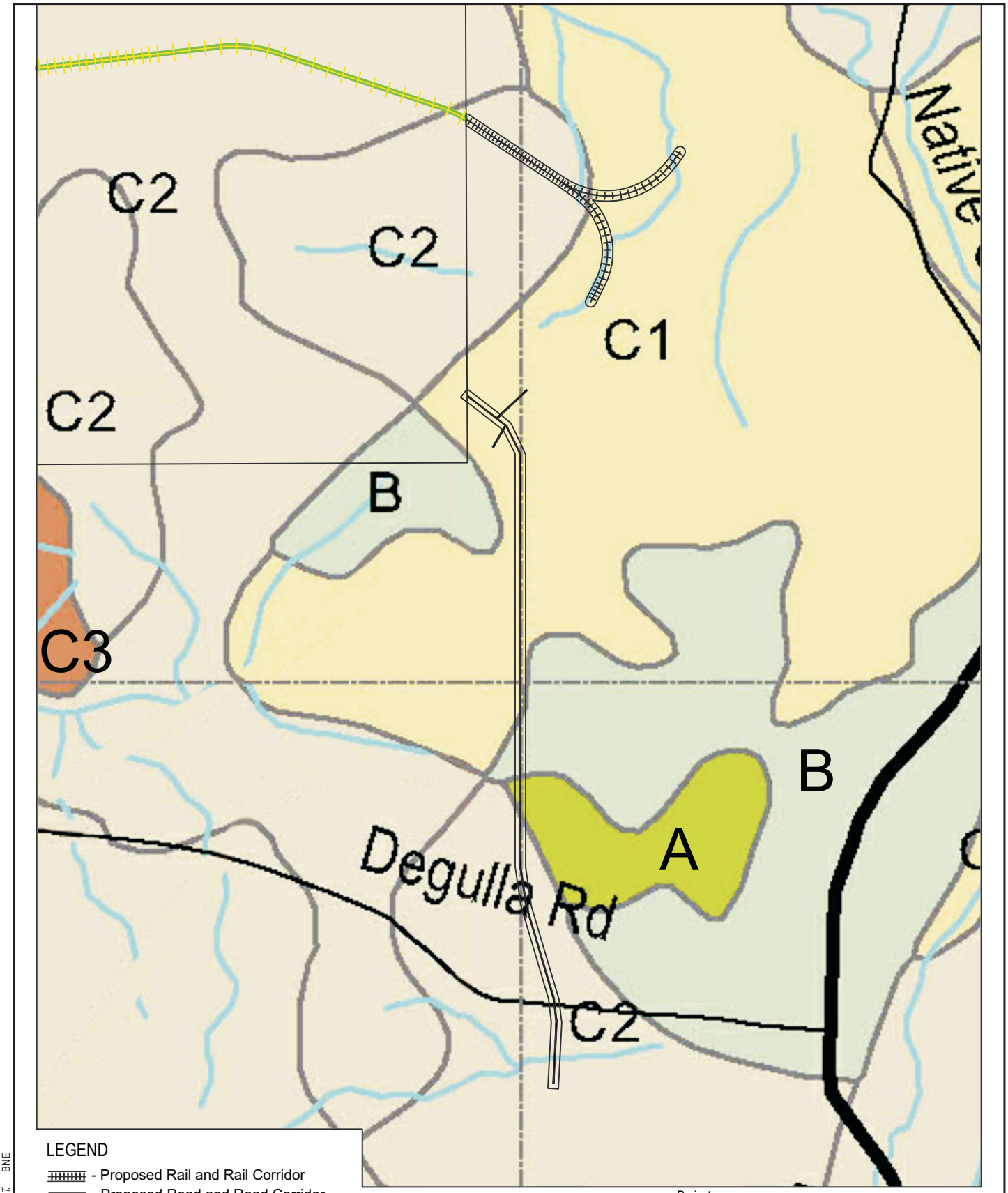

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Supplementary Environmental Impact Statement

AGRICULTURAL LAND CLASSES RELEVANT TO OFF LEASE ROAD AND RAIL

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OFF LEASE ASSESSMENT REPORT

Figure: **2-4**

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2.4 Ecology Impact Assessment

HGPL commissioned AMEC to undertake an ecology survey of the entire rail spur and access road (outside the MLA) to identify any ecological values that may occur within the proposed corridor, and to assess the potential environmental impacts to those values as a result of the proposed infrastructure. The surveys targeted ecological values at the State level, such as regional ecosystems (REs), species listed under the *Nature Conservation Act 1992* (NC Act) and watercourses. Commonwealth matters were also targeted, including threatened ecological communities (TECs) and species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The findings of the survey are provided in SEIS Volume 2 Appendix Q.

The report is intended to be a stand-alone report providing sufficient information on the environmental values of the proposed off lease rail spur and access road alignment to support future development approvals that may be required, such as under the SP Act.

A summary of the ecology impacts and conclusions is provided below. Details of the desktop analysis, field survey methodology, results, any impacts and associated mitigation is provided in the Off Lease Ecology Report (SEIS Volume 2 Appendix Q).

2.4.1 Summary of Ecology Impacts and Conclusions

An ecology survey of the off lease rail spur and access road corridors was conducted by three experienced AMEC ecologists over three days (16 to 19 August 2012). A 100 m wide study corridor (164 ha in area) was ground-truthed for ecological values, with a view to defining the likely impacts associated with a final 60m wide corridor (99 ha). The purpose of the survey was to validate desktop findings including the presence of REs and TECs, undertake fauna habitat assessments and targeted surveys for individual threatened flora and fauna species, including the black-throated finch, retro slider and King blue-grass.

Field surveys confirmed the presence of two broad habitat types that correspond with native grasslands and open eucalypt woodland communities. The area was dominated by open grasslands, including patches of non-remnant areas of improved pasture. Five REs were confirmed, including one Of Concern RE11.8.11 associated with native grasslands. No TECs were identified within the study area. The potential area of Brigalow TEC was incorrectly mapped with the field surveys validating this area as Least Concern RE10.5.12. The listing advice for the Natural grasslands TEC defines the ecological community as occurring within eight subregions of the Brigalow Belt North and South bioregions. Within these subregions, RE 11.8.11 forms part of the TEC. While mapped for the study area, RE 11.8.11 on the off lease rail spur and access road occurs in Subregion 8 – Upper Belyando Floodout of the Brigalow Belt North bioregion, and is therefore excluded from the TEC listing due to its location outside the specific subregions.

No EPBC Act or NC Act flora species were identified within the proposed corridor during the survey. While targeted surveys were carried out for the threatened king blue-grass (*Dichanthium queenslandicum*), due to the timing of the survey outside the optimal (post-wet season) period for detecting grasses, its presence in the study area cannot be ruled out at this stage. It is recommended that further targeted survey for this species is undertaken during the optimal sampling period (i.e. between March and May in 2013) to determine its presence/absence. This species is associated with the Of Concern RE11.8.11 for which mitigation measures, including offsets are proposed.

2 Off Lease Road and Rail

No EPBC Act or NC Act fauna species were recorded within the proposed corridor during the survey. However the squatter pigeon (*Geophaps scripta scripta*) was recorded within close proximity (<1 km) to the east of the corridor, and the koala (*Phascolarctos cinereus*) has been previously recorded to the west within the mine lease. Therefore these two species have been classified as likely to occur in the study area due to close proximity of confirmed records and areas of potential habitat. An additional four EPBC Act and nine NC Act fauna species have been identified as likely to occur in the study area based on their known distribution and presence of suitable micro-habitats confirmed during surveys. These fauna species are detailed in Table 5.4 SEIS Volume 2 Appendix Q. Seven migratory birds have also been identified as known, likely or with potential to occur as detailed in Table 5.5 SEIS Volume 2 Appendix Q.

Habitat modelling and mapping was conducted for all fauna and migratory species identified as known, likely or with potential to occur in the corridor. The mapping classed habitats into high and low value which then assisted to identify the extent of impact to each species habitats. The majority of threatened fauna species were found to have 'low' value habitats within the rail spur and access road corridor due to unsuitable vegetation types and lack of their required micro-habitats.

Where 'high' value habitat has been mapped this was predominantly those areas of remnant vegetation that were found to be in close proximity to permanent water for species such as the Red Goshawk, Square-tailed Kite, White-bellied Sea-eagle.

The study area was found to be mostly unsuitable for koalas due to the large presence of grassland communities and poor condition of riparian vegetation. Reptile habitat was also found to be of low value due to lack of suitable micro-habitats such as leaf litter, fallen logs etc.

2.5 Summary of Other Aspect Assessments

This off lease assessment has identified and assessed potential impacts on land use, soils and ecology of the off lease road realignment and the revised off lease rail spur alignment. The assessment of other potential environmental aspects for these pieces of infrastructure are adequately addressed in the Kevin's Corner EIS (HGPL 2011). Further discussion of air quality, noise and vibration impacts and mitigation strategies specific to the proposed off lease rail and road developments and in response to submitter comments are presented in the Supplementary EIS (SEIS).

A summary of the assessments relevant to the off lease rail and road corridor are outlined in Table 2-5. In preparing this report, reference has been made to existing reports prepared for and presented in the EIS and SEIS.

Table 2-5 Summary of assessments relevant to off lease rail corridor

Aspect	Reference	Comment
Land use, tenure and character	EIS Section 6 and 7	In addition to the EIS (HGPL 2012), further discussion of land use impacts and mitigation measures are discussed in Section 2.2 of this Assessment Report.
Geology, soils and land disturbance	EIS Section 4 and 5	In addition to the EIS (HGPL 2012), further discussion of soils impacts and mitigation measures relevant to soils and land disturbance is discussed in Section 3 of this Assessment Report.
Terrestrial ecology	EIS Section 9	In addition to the EIS (HGPL 2012), further desktop assessment of ecology impacts and mitigation measures are discussed in Section 2.4 of this Assessment Report; however based on the nature of the desktop assessment, no ground truthing was conducted as part of this Assessment.
Aquatic ecology and stygofauna	EIS Section 10	Results of desktop assessment and mitigation are presented in the EIS (HGPL 2011); however ground truthing was not completed as part of this Assessment. No additional water courses have been identified in the vicinity of the proposed off lease rail and road alignment; should they be found, appropriate investigation and management measures would be adopted.
Surface water and groundwater	EIS Section 11 and 12	The EIS (HGPL 2011) discussed the development of a levee to protect the rail infrastructure. No additional water courses have been identified in the vicinity of the proposed off lease rail or road alignment; should any be found, appropriate investigation and management measures (such as flood controls) would be adopted.
Air quality and greenhouse gas emissions	EIS Section 13 and 14; SEIS Volume 2, Appendix G	The EIS (HGPL 2011) presents air quality and greenhouse gas emissions management measures that are applicable to the development of the proposed off lease road and rail infrastructure. The SEIS presents an estimate of the greenhouse gas impact from clearing the proposed area to be disturbed including the off lease road and rail corridor.

2 Off Lease Road and Rail

Aspect	Reference	Comment
Noise and vibration	EIS Section 15; SEIS Volume 2, Appendix H	Off-site road traffic noise was adequately assessed against the Department of Main Roads' Road Traffic Noise Management Code of Practice criteria in the Kevin's Corner EIS (HGPL. 2011). Noise and vibration impacts associated with the proposed construction and operation of the rail infrastructure were assessed in accordance with Queensland Rail's Code of Practice for Railway Noise Management criteria and presented in the EIS (HGPL 2011). The noise and vibration impacts associated with the revised rail spur alignment and worst case mining operations and rail movements are presented in detail in the SEIS. The SEIS proposes that satisfactory noise levels can be achieved at impacted sensitive receptors through a combination of measures including: • Appling train speed controls within the mining lease; • Applying effective track and track/wheel engineering techniques to reduce noise; • Use of barriers in sensitive sections of the alignment; and • Treating sensitive receptors' dwellings to reduce external noise intrusion.
Waste	EIS Section 16	The waste streams and management strategies identified in the Kevin's Corner EIS (HGPL 2011) are considered sufficient for the waste generated from construction and maintenance of rail and road infrastructure.
Traffic	EIS Section 17	N/A, no other access roads are proposed anywhere on the rail line. All external road upgrades and construction will be completed to required standards and design guidelines as stipulated by the Department of Transport and Main Roads (DTMR). A road maintenance program will be developed in conjunction with DTMR and BRC.
Indigenous and Non-Indigenous Cultural Heritage	EIS Section 18 and 19	The EIS (HGPL 2011) identified two sites associated with twentieth century pastoral activity (KC07 and KC08) in close proximity to the off lease rail corridor. No sites of historical mining heritage were located during the field survey. The EM Plan developed for the construction and operation of the off lease road and rail will include strategies in the event that indigenous or non-indigenous cultural artefacts are identified onsite.
Social impacts and community consultation	EIS Section 20 and 21	No change.
Health and safety	EIS Section 22	No change.
Economics	EIS Section 23	No change.
Hazard and risk	EIS Section 24	No change.
Decommissioning and rehabilitation	EIS Section 26	No change.

3

Water Assurance

3.1 Introduction

In response to comments received relating to the assurance of water supply for the Kevin's Corner Project the following commentary is presented.

3.2 Anticipated Water Supply and Demand

Kevin's Corner Project is a large multi-faceted mining operation, which will require a reliable source of make-up water to support its operational needs. A supply and demand assessment of the water required on an annual basis for the Project is shown in Figure 3-1.

Over the life of mine, the water demand is estimated to be 261 GL. The site will have an initial water supply requirement of approximately 505 ML (2013) gradually increasing to an average annual requirement of 9.6 GL from 2020 to 2043.

Figure 3-1 also shows potentially available water on site (these are indicated as negative volumes on the bar graph). This will primarily come from groundwater dewatering for mine safety and mine surface water. The assessment and anticipated life of mine water balance for the site indicates that the off-site water supply will not be required until 2017 (year 5) (represented in Figure 3-1 by a light blue linear graph – "balance (retail supply)") which is at the end of construction and halfway through total operations ramp up.

Factoring in on-site available water, there will be an initial external water supply requirement of approximately 465 ML/yr (2017). This gradually increases to approximately 7.8 GL/yr from 2021 to 2043. The bulk of the water requirements relates to the CHPP, followed by requirements for dust suppression activities, and requirements to balance out losses from storage evaporation. Figure 3-2 shows a breakdown of the water demand over the life of mine. The following sections discuss the strategy in meeting the water supply demands of the Project.

3.3 Proposed Water Supply Strategy and Components

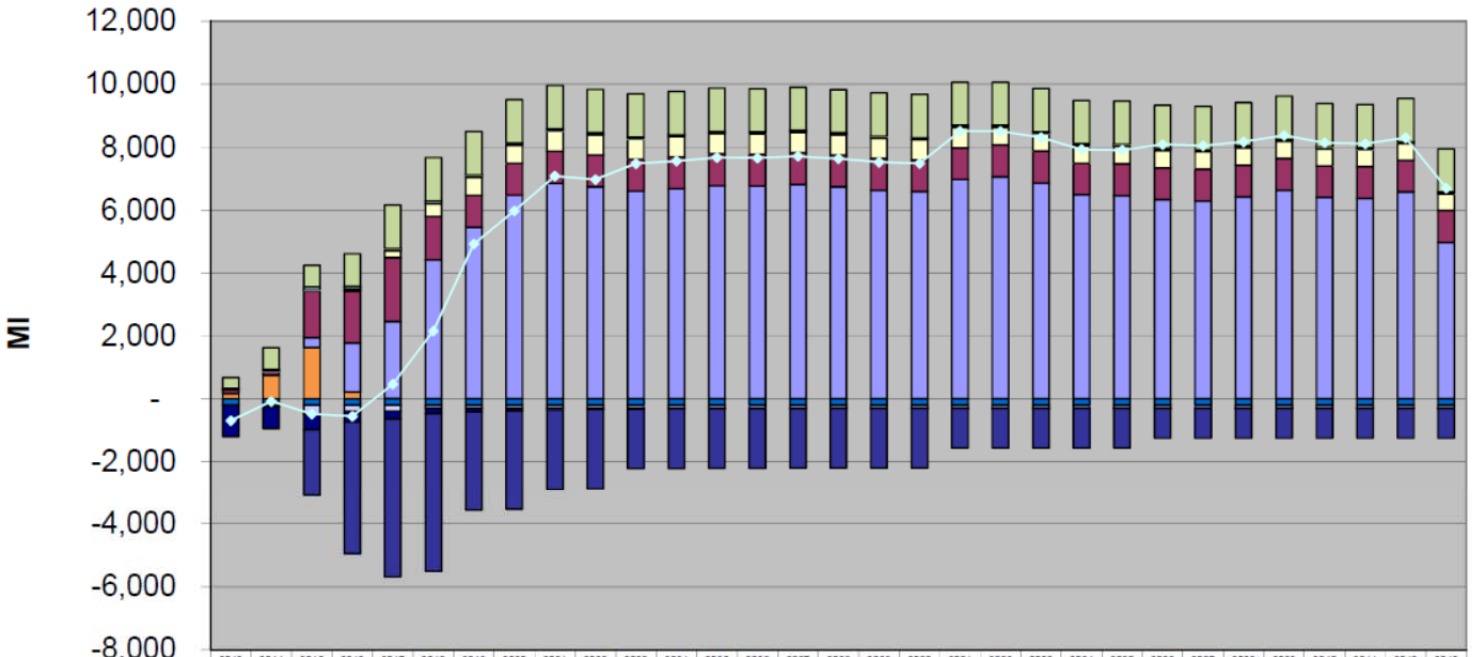
The preferred strategy for water supply to the mining operations comprises three considered sources to meet the projected water demand from the mine. These include:

- Mine water generated on site (groundwater and surface runoff);
- Emerald Fairbairn Dam- Supply from an established dam where the Project can purchase high priority water allocation from current owners of the water that usually includes excess from local area irrigators; and
- Flood harvesting from the Belyando River- Supply from a location relatively close to the site through flood harvesting and off-stream storage.

This triple source approach would provide more certainty of water supply to the site than any of the above sources in isolation and has been adopted to allow for continued operation of the mining operations given that the site would still be able to receive part of the overall water requirements from any source should there be interruption either through damage/maintenance to the others or during extended potential dry periods.

3 Water Assurance

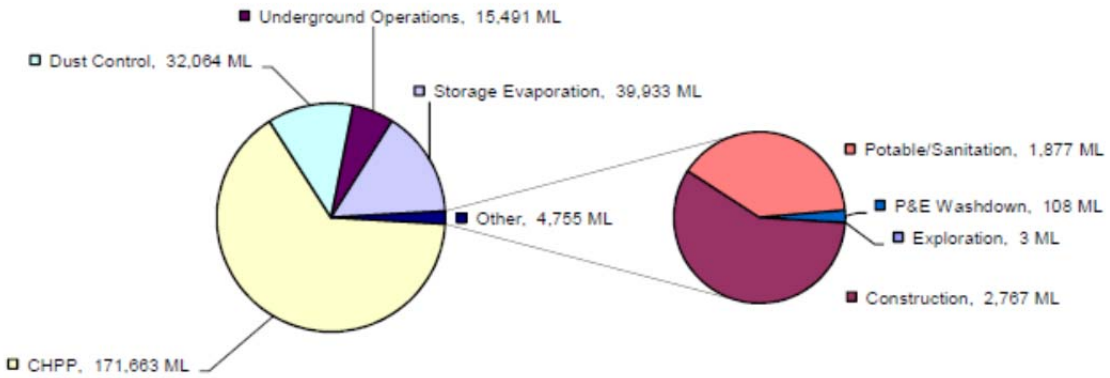
Figure 3-1 Kevin's Corner Project Site Water Balance



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Groundwater de-watering for mine safety	0	0	-2102	-4205	-5046	-5046	-3154	-3154	-2523	-2523	-1892	-1892	-1892	-1892	-1892	-1892	-1892	-1892	-1261	-1261	-1261	-1261	-1261	-946	-946	-946	-946	-946	-946	-946	-946
Waterbores and existing dams	-1000	-700	-490	-343	-240	-168	-118	-82	-58	-40	-28	-20	-14	-10	-7	-5	-3	-2	-2	-1	-1	-1	0	0	0	0	0	0	0	0	0
Mine effected water	0	-50	-300	-200	-200	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
Surface water run off / inflow (Non mine effected)	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
Storage Evaporation	344.3	688.5	688.5	1032.8	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0	1377.0
P&E Washdown	0.0	0.0	0.0	4.8	7.2	6.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Potable/Sanitation	38.0	58.8	91.0	86.0	74.1	84.2	77.9	71.6	66.8	57.3	58.2	58.3	56.1	56.8	55.3	55.8	56.8	56.9	58.3	58.2	57.2	56.9	58.0	55.8	55.4	55.2	55.7	54.5	52.9	49.3	49.8
Underground Operations			16.3	60.2	216.2	402.9	570.2	570.2	644.4	644.4	644.4	644.4	644.4	644.4	644.4	644.4	644.4	644.4	644.4	554.2	554.2	554.2	554.2	554.2	554.2	554.2	547.8	541.3	541.3	528.4	528.4
Dust Control	122.5	122.5	1,500.	1,653.	2,021.	1,378.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.	1,010.
CHPP	-	-	317	1,554	2,455	4,420	5,454	6,478	6,853	6,739	6,603	6,677	6,779	6,764	6,813	6,739	6,629	6,584	6,971	7,060	6,861	6,480	6,459	6,330	6,287	6,416	6,625	6,396	6,369	6,576	4,974
Construction	167	752	1,628	215	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balance (Retail Supply)	-695	-80	-479	-556	465	2,154	4,922	5,975	7,075	6,969	7,476	7,559	7,665	7,655	7,705	7,634	7,526	7,482	8,502	8,501	8,302	7,921	7,901	8,085	8,042	8,171	8,373	8,137	8,108	8,299	6,697

3 Water Assurance

Figure 3-2 Breakdown of Water Demand for Kevin's Corner Project (2013-2043)



3.3.1 Mine Water Generated on Site

Onsite mine water will come from the following sources:

- groundwater dewatering for mine safety
- surface water run off/ inflow from non-mine affected areas;
- surface water from mine affected areas; and
- water from water bores and existing dams.

Groundwater available from site is the preferred supply due to proximity, the need to remove it in order to mine safely, as well as the zero discharge allowed. Predictive groundwater modelling allowed for an accurate range of estimate of groundwater ingress over the LOM. The predicted ingress volumes, based on a year-on-year plan, allowed for the estimate of total groundwater volumes to be extracted during the mining project. This estimated (best-fit case) 117 GL can be removed either year-on-year to match the mining schedule or during the initial 5 to 10 years of operation to facilitate mine water supply, prior to the requirement for external water sources. (SEIS Appendix L- Groundwater Report provides the predictive groundwater model details. The modelled estimate of 117GL (Base Case) of underground water ingress to the site can potentially meet about 44% of the site water demand over the life of mine.

An annual distribution of how groundwater can supply the site's water demands is shown on Figure 3-1. Over the life of mine, approximately 57 GL (Figure 3-1) of groundwater will be available to meet the water demands of the Project. This is a conservative projection compared to the modelled estimate of 117GL (Base Case) available water onsite. Such a conservative approach has been taken to provide more certainty of water supply to the site. The use of groundwater in combination with other external sources will allow for better water assurance for the Project.

Harvestable mine surface water is expected to contribute less to meeting the demands at a combined volume of approximately 300 ML/yr (Figure 3-1).

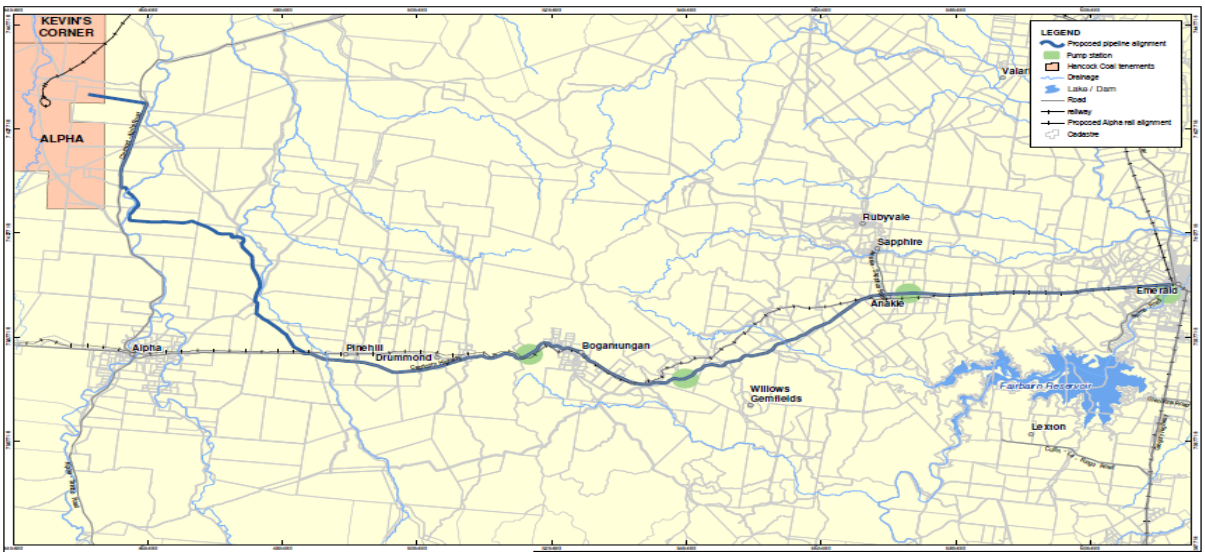
3 Water Assurance

3.3.2 Emerald Fairburn Dam and Pipeline

A study into the viability of securing water allocation from the Emerald Fairbairn Dam as a source point, in association with a proposed dedicated water pipeline from Fairbairn Dam across to Alpha and Kevin's Corner mine sites has been undertaken. This option includes the construction of a pipeline from the downstream Selma Weir off-take from the Fairbairn Dam near Emerald.

The Emerald water pipeline would be sized to allow for the conveyance of how ever much water supply allocation can be secured in the near future.

Figure 3-3 Indicative Location of Fairbairn Dam and pipeline to Kevin's Corner Coal Project



Formal purchase of water allocation from active water brokers has been underway, and currently nine (9) GL/yr allocation of high priority (HP) water has already been secured. This has an ability of being able to convert into 15 GL/yr of medium priority (MP) allocation from the same source. Should any additional water contracts be available for supply, these will also be negotiated with a view to increasing Kevin's Corner overall annual allocation of HP water.

Review of the current information available from the Department of Natural Resources and Mines (NRM) indicates that the High Priority (HP) water allocations are currently assigned a reliability of around 95% to 98% of the time. That is to say that HP water can be supplied between 346 and 358 days in every year over the long term. Review of the currently announced allocations for the Fairbairn Dam indicates that over 2011 to 2012, SunWater has announced a 100% supply to all licensed HP and Medium Priority (MP) water allocations (Worley Parsons, 2012).

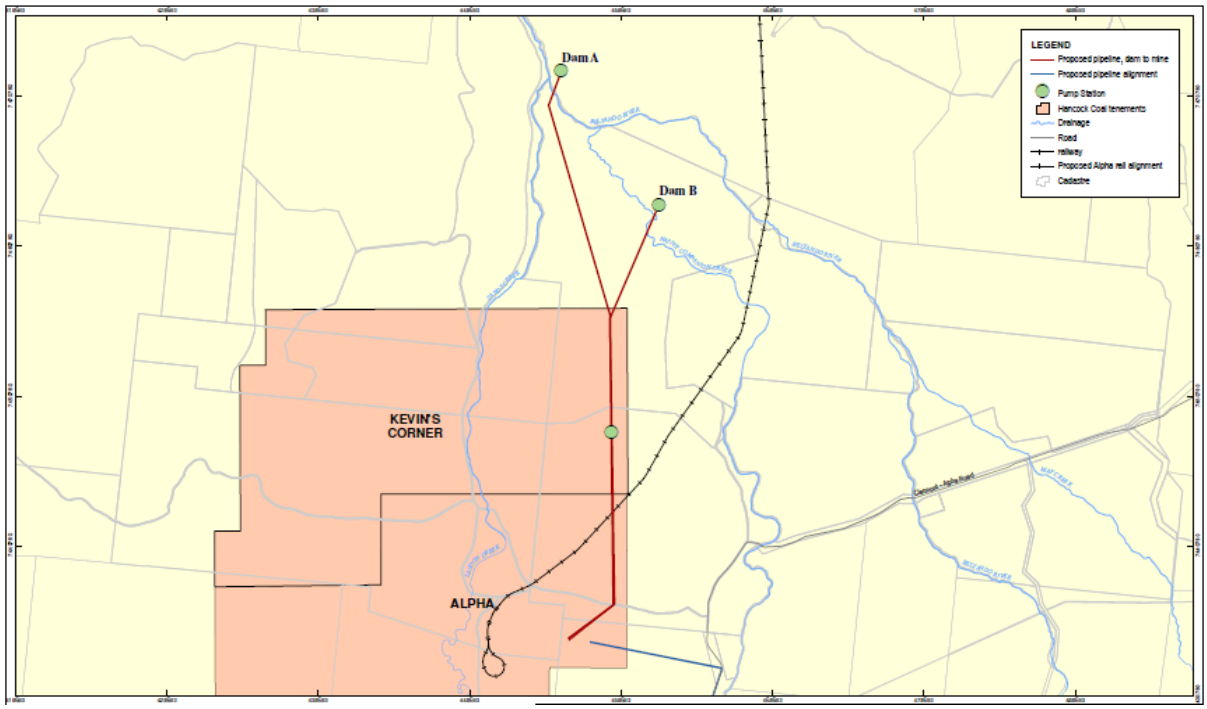
As the water from Fairbairn Dam will be supplying the operations of both Kevin's Corner and Alpha mines, currently secured allocations on its own will not meet current site demands but will significantly contribute to the three-pronged approach to operational security, specific to bulk water supply.

3 Water Assurance

3.3.3 Off lease Flood Harvesting from Belyando River

Another potential water source is flood water harvesting from the Belyando River in combination with a proposed off-stream storage dam, situated to the north of Kevin's Corner and Alpha MLAs (refer Figure 3-4).

Figure 3-4 Indicative Location of Off lease Flood Harvesting from Belyando River



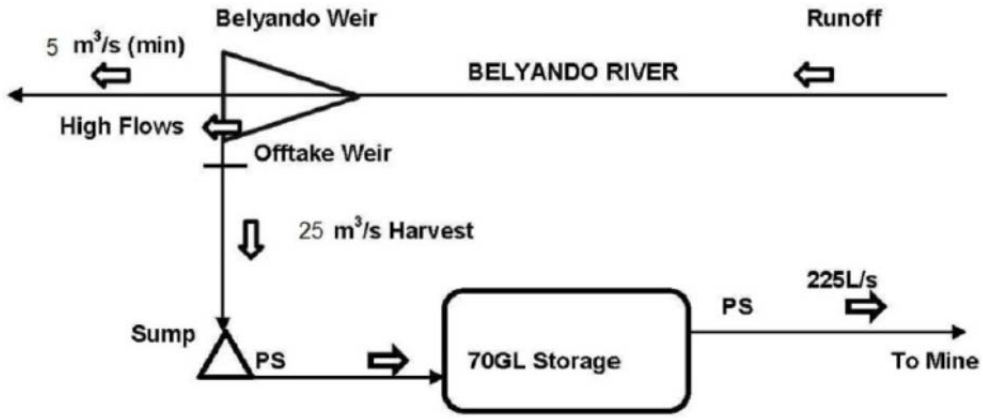
It is proposed to construct a weir system within the Belyando River to operate the flood harvesting system as follows (Worley Parsons, 2012):

- A lateral weir and channel arrangement providing water to an excavated sump. The weir would be sized to convey a maximum of 25,000 L/s (2,160 ML/d) for a particular water level within the creek.
- A major weir across the river system with a piped outflow sized to convey 5 m^3/s prior to water flowing over the lateral weir. The maximum height of the in-creek weir would be sized to allow 25,000 L/s to flow down the lateral weir before overtopping occurs.
- Flood harvesting pumps would be located adjacent to the excavated sump at the base of the off-stream storage embankment. The objective is to minimise the pump distance from the harvest location to the off-stream storage. The off-stream storage will have a nominal size of 70 GL.

A general arrangement of this weir configuration is presented below in Figure 3-5.

3 Water Assurance

Figure 3-5 Proposed Flood Harvesting Arrangement



Review of the Burdekin Basin Resource Operations Plan (ROP) – December 2009 indicates that currently within Upper Belyando River (sub-area E) there exists approximately 130 GL/yr of general reserve water and 20 GL/yr of Strategic Reserve state water available to be provided as an allocation for activities such as projects declared as significant projects or mining activities (Worley Parsons, 2012).

An application has been made for a water harvesting licence of 20 GL/annum from the Upper Belyando River (sub-area E). Of this, 10 GL is anticipated to come from State Reserve and the other 10 GL from Strategic Reserve.

The critical project aspects of this option are the required State and Federal government approvals and permits, cultural heritage and native title reviews, landholder and other related stakeholder discussions, as well as the more technical elements of determining the hydraulic, power and other engineering design determinants are being further investigated to ensure this (potential) third option of providing supplemental water supply to both mine-sites occurs.

3.3.4 Connors River Dam Project (CRD Project)

In July 2012, Sunwater officially informed HGPL and Hancock Coal Pty Ltd (HCPL) that it has ceased the CRD Project. This option is no longer considered as a viable water supply source for the Kevin's Corner mine. The decision was due to the Queensland Government's advice that it is not in the position to provide debt or equity funding for the CRD Project and that it is not supportive of Sunwater continuing to incur costs for the CRD project not underwritten by customers. In addition, Sunwater advised that there has been insufficient financial support for the continuation of the CRD Project activities by customers.

Prior to November 2011, Hancock had a contract lease agreement with Sunwater to obtain a reliable supply of water to the Kevin's Corner (and Alpha Coal) mine site through the previously proposed Connors River Dam and Pipeline from Moranbah to Alpha.

3.3.5 Operational initiatives

As part of the mine water management strategy operational intiatives have been considered to reduce raw water use. These initiatives include:

3 Water Assurance

Introduction of Belt press filters in the CHPP

One of the water reduction measures that is under consideration for the Kevin's Corner Project is the implementation of belt press filters for the CHPP. The introduction of belt press filters could potentially halve the CHPP water demand, reducing total water requirements by around 7.25 GL /yr. Additionally the production of 'dry' fine rejects material would reduce the footprint of the currently considered out-of-pit tailings storage facility (TSF) at Kevin's Corner..

Surface evaporation protection

HGPL has commissioned a technical review of the potential for the site to utilise surface evaporation protection techniques for the site water storages. This review has identified a potential 1 GL per year saving through the installation of modular semi floating pods on the surface of the site dams.

Soils engineering compaction technology

It is proposed to examine the use of a soils engineering specialist company to design and implement proven soils engineering principles to stabilise site earthworks. This will involve examination and application of proprietary techniques that use less water and specialist equipment to obtain the required engineering results. This will significantly reduce the need to use water as with conventional compaction techniques.

4

Summary and Conclusions

The Kevin's Corner EIS (HGPL 2011) provided for detailed assessment and mitigation of the potential impacts on the environmental values within MLA 70425. It also considered off lease road and rail infrastructure; however the description of the off lease rail alignment has since been slightly refined.

The refined rail spur alignment outside of MLA 70425 consists of both north and south rail sections of approximately 2 km in length to align with the Alpha to Abbot Point Rail Line. An approximate 80 ha corridor (150 m in width) has been allowed for assessment of the proposed off lease rail infrastructure.

The proposed realignment of Jericho-Degulla Road involves a diversion of approximately 8 km of the unsealed Jericho-Degulla-Road. An approximate 152 hectare (ha) corridor (150 m in width) has been allowed for the assessment of the proposed off lease road infrastructure.

This assessment report presents the results of a desktop review of current literature and available studies to describe the existing environmental values relevant to land use, ecology and soils-related aspects, and potential impacts that may occur as a result of the development of the current Project off lease road and rail infrastructure. Ecological values of the site have been confirmed through the field survey undertaken in August 2012 which identified available habitats and impacts and which recommended appropriate mitigation measures to prevent or minimise impacts. The mitigation measures will be incorporated into the EM Plan for the off lease areas (Appendix T2 of the SEIS).

The landscape of the rail spur and access road has been subject to previous land clearance and agricultural land uses, predominantly grazing. This has resulted in a fragmented and quite degraded landscape. The presence of buffel grass and lack of permanent water has also reduced the quality of food resources and habitats for a number of species, including the black-throated finch.

The most significant impact to biodiversity values within the off lease rail spur and access road is associated with the clearing of remnant vegetation. It is estimated a total of 76 ha of remnant vegetation is likely to be cleared associated with construction of the off lease rail spur and access road. Approximately 60 ha of this is associated with the Of Concern RE11.8.11 as it occurs as a mixed polygon with RE11.8.4. Therefore impacts to fauna habitats are mostly significantly lower than the total clearing area, and are provided in SEIS Volume 2 Appendix Q. .

The potential impacts to vegetation, fauna species and watercourses have been assessed and appropriate mitigation measures proposed. A number of mitigation measures are recommended which include limiting clearing where possible, undertaking clearing in a staged manner and utilising fauna spotters to minimise impacts to fauna species. It is also proposed species-specific management plans will be prepared (prior to construction) that will address both EPBC Act and NC Act requirements, including any required tampering of animal breeding places.

Post construction revegetation is also proposed in those areas that are not required for the ongoing operation and maintenance of the rail and road corridors to the pre-disturbance land use.

After taking into consideration the level of impact from clearing, and proposed mitigation measures, the residual impacts to REs and fauna habitats are not considered to be significant. To further compensate for these impacts offsets are proposed for clearing of approximately 60 ha of Of Concern RE11.8.11 and high value habitats for particular EPBC Act and NC Act fauna species. Further information on proposed offsets for the Kevin's Corner Coal Project is provided in the SEIS Appendix P (Biodiversity Offsets Strategy).

The potential for fragmentation and segregation of pastoral areas will require one or more stock crossings to allow for the movement of stock in and out of each of these created land parcels and

4 Summary and Conclusions

consultation between the land holder and rail manager will be required to allow for stock movement across the rail infrastructure. Provision for this is outlined in the EM Plan relating to the off lease area (Appendix T2 of the SEIS).

With regard to water assurance matters, the review of supply options and anticipated life of mine water balance for the site indicate that the site will not require an off-site source of water before year 5, which is at the end of construction and halfway through total operations ramp up. An assessment of feasibility of water supply options has identified three sources to meet the projected water demand from the mine. These include:

- Mine water generated on site (groundwater and surface runoff);
- Emerald Fairbairn Dam- Supply from an established dam where the Project can purchase high priority water allocation from current owners of the water that usually includes excess from local area irrigators; and
- Flood harvesting from the Belyando River- Supply from a location relatively close to the site through flood harvesting and off-stream storage.

This triple source approach would provide more certainty of water supply to the site than any of the above sources in isolation and has been adopted to allow for continued operation of the mining operations given that the site would still be able to receive part of the overall water requirements from any source should there be interruption either through damage/maintenance to the others or during extended potential dry periods.

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6

Limitations

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URS Australia Pty Ltd
Level 17, 240 Queen Street
Brisbane, QLD 4000
GPO Box 302, QLD 4001Australia

T: 61 7 3243 2111
F: 61 7 3243 2199

www.ap.urscorp.com